NAVAIR 50-1C-549

U.S. NAVY REGIONAL CLIMATIC STUDY OF THE MOZAMBIQUE CHANNEL AND ADJACENT WATERS

JULY, 1989

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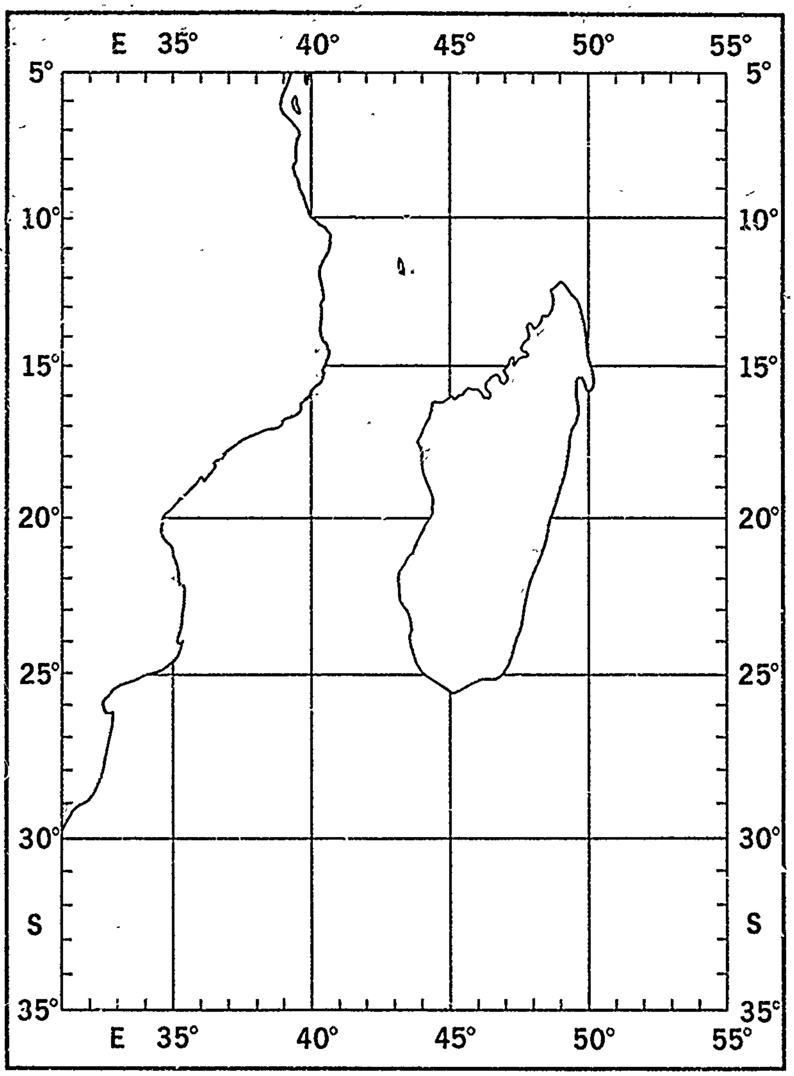

PREPARED BY
NAVAL OCEANOGRAPHY COMMAND DETACHMENT,
ASHEVILLE, N.C.

PREPARED UNDER THE AUTHORITY OF
COMMANDER, NAVAL OCEANOGRAPHY COMMAND
STENNIS SPACE CENTER, MS 39529-5000

S/N 0850-LP-015-4500

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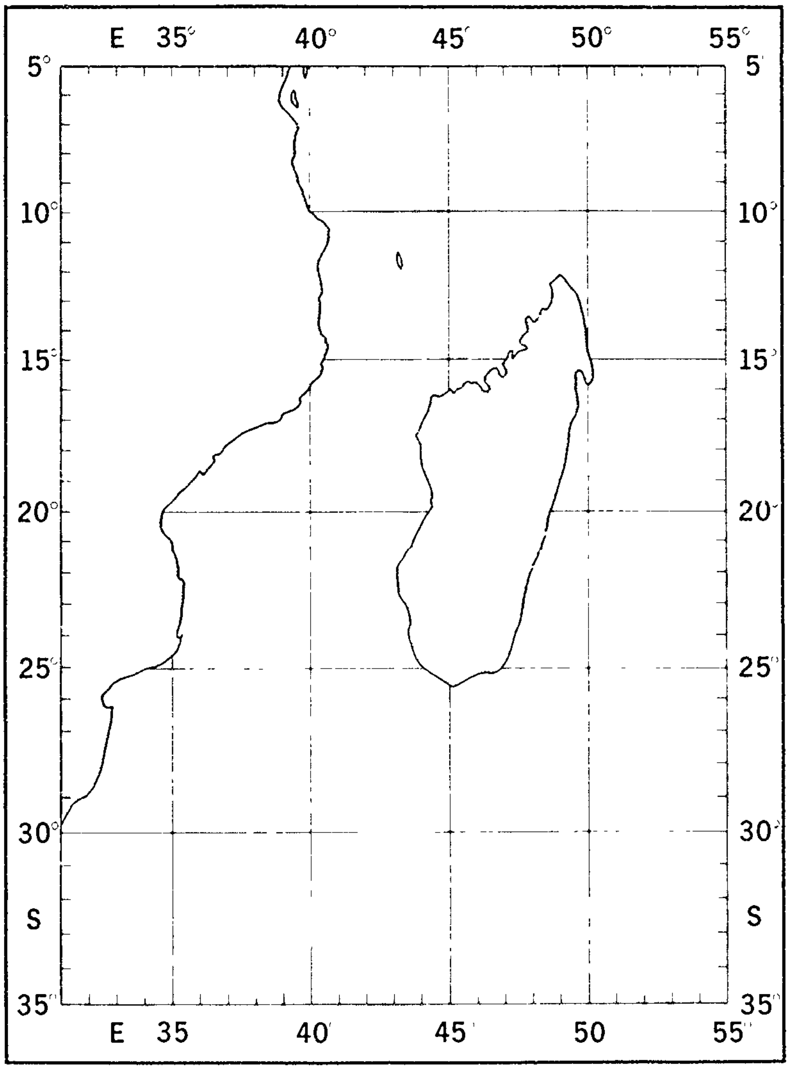

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ASHEVILLE

S/N 0850-LP-015-4500

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U.S. Navy Regional Climatic Study
of the Mozambique Channel and Adjacent Waters

The U.S. Navy Regional Climatic Study of the Mozambique Channel and Adjacent Waters was prepared by the Officer in Charge, Naval Oceanography Command Detachment, Asheville, North Carolina, under authority of Commander, Naval Oceanography Command. The work was performed at the National Climatic Data Center (NCDC). Specific acknowledgement of the NCDC staff is made to Mr. J.D. Elms, project leader; Mr. P.M. Steurer, for his data analysis; Messrs C.N. Williams, Jr., R.G. Baldwin and Ms. P.L. Franks for data processing and digital graphics; Mr. M.J. Changery for technical review; and Messrs M.G. Burgin and S.J. Miller for their drafting skills.

Geographical and Data Coverage

This study, entitled the U.S. Navy Regional Climatic Study of the Mozambique Channel and Adjacent Waters, is centered on the Mozambique Channel between Mozambique in southeast Africa and the island of Madagascar. The study limits extend from 5°S to 35°S and 31°E to 55°E, thus allowing a small overlap between this study and the one for the Southern African Waters, (NAVAIR 50-1C-548). Most emphasis was placed on the marine areas, with only a few coastal station summaries included in the text and final section of this publication.

Figure 1 outlines the study area and shows the location of the land station summaries and bathymetry information.

Surface marine observation statistics are presented on monthly charts in the form of graphs, tables and isopleth maps. Land station data appear graphically and in Station Climatic Summary tables. The marine data (mostly from ships of opportunity) were summarized and machine plotted by one-degree quadrangle. The graphs and tables for the marine areas are also presented by one-degree quadrangles (for visibility, wave heights, wind roses and ocean currents). The geographical area for the tables, ocean currents, and wind roses had to be divided and presented on four pages for clarity. These graphs and tables represent the objective compilation of available ship data; the data were not adjusted for suspected bias (low observation count, heavy weighting of observations during a short time interval, biases in coding, etc.), and differences may be found when comparing the graphical data with isopleth analyses. The total number of observations for a given one-degree square should always be considered when interpreting the data, as there may be an insufficient number to permit representative statistics.

Approximately 825,000 surface marine observations were used in computing the statistics. These data were collected by ships of various registry traveling in the area. Many of the ships' observations are presently transmitted over the Global Telecommunications System, captured and archived. However, many are digitized from ship log forms by various participating members of the World Meteorological Organization, and exchanged under international agreement among the various maritime nations of the world. Data for this study date back to 1854 and run through 1984. The bulk of the observations are from the last 30 years, which is significant because more recent observations contain more elements than pre-1948 reports. The density of observations is greatest along the major shipping routes which, in this study area, includes one passing through the Mozambique Channel, where most traffic tends to hug the African coast, and a second that passes near the southeastern corner of Madagascar and extends onto the southern tip of Africa.

The mean sea current charts were obtained from available ship's "set and drift" measurements that had been forwarded to the Naval Oceanographic Office from ships of various registry. The data were summarized to give the primary and secondary current directions and mean speeds.

Physical Features

The study area lies in the southern hemisphere bordering the southeast coast of Africa along Tanzania, Mozambique and South Africa and extending east into the Indian Ocean just east of Madagascar. Besides including the world's fourth largest island (Madagascar), a number of smaller islands are found off the coast of Tanzania and at the northern end of the Mozambique Channel. At its narrowest point, the Mozambique

Channel spans 210 nautical miles between Mozambique and Madagascar. Based on weather reports most of the ship traffic seems to prefer navigating closer to the African coast than the center of the channel or the Madagascan coast. This is probably due to the amount of oil tanker traffic out of the Persian Gulf enroute to the Americas and Europe, the lack of major west coast Madagascan ports, hazardous waters off Madagascar, and most importantly, the well-defined current along the western side of the channel.

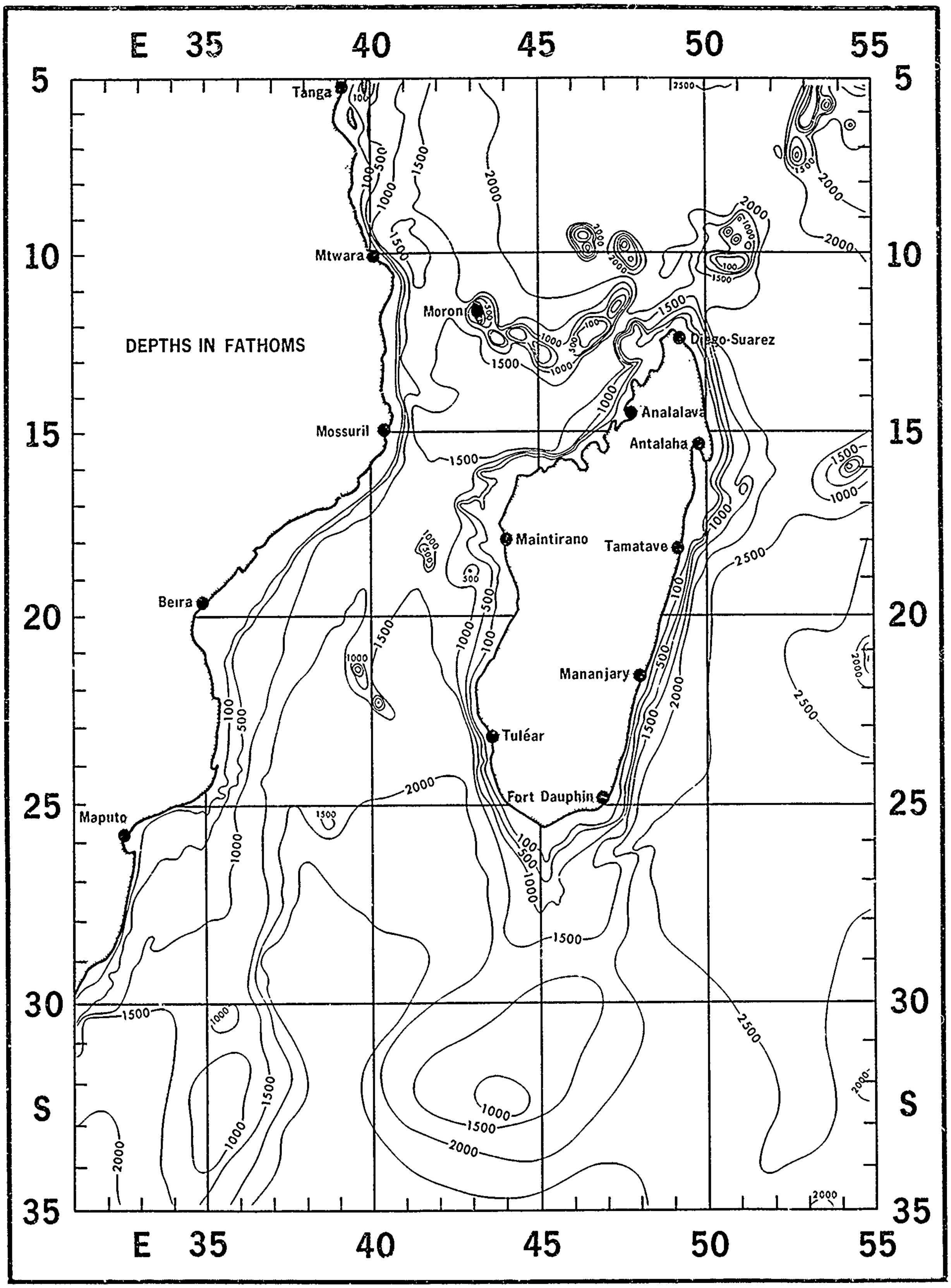


Figure 1. Study area locator map and bathymetry chart

The equatorial ocean current's flow is drastically affected by the island of Madagascar as it causes the current to split its flow around the island to the north (the Equatorial Current) and south (the South Equatorial Current). The warm and fairly strong and consistent Mozambique Current flows south through the channel throughout the year. It does, however, demonstrate somewhat greater strength during the northern monsoon. Figure 2 shows the general ocean currents of the region during the summer and winter seasons. The constancy of the Mozambique Current is depicted along with the ccuntercurrent established in the eastern corridor of the channel with speed and direction much less consistent due to varying flow around the ends of the island and by numerous local conditions.

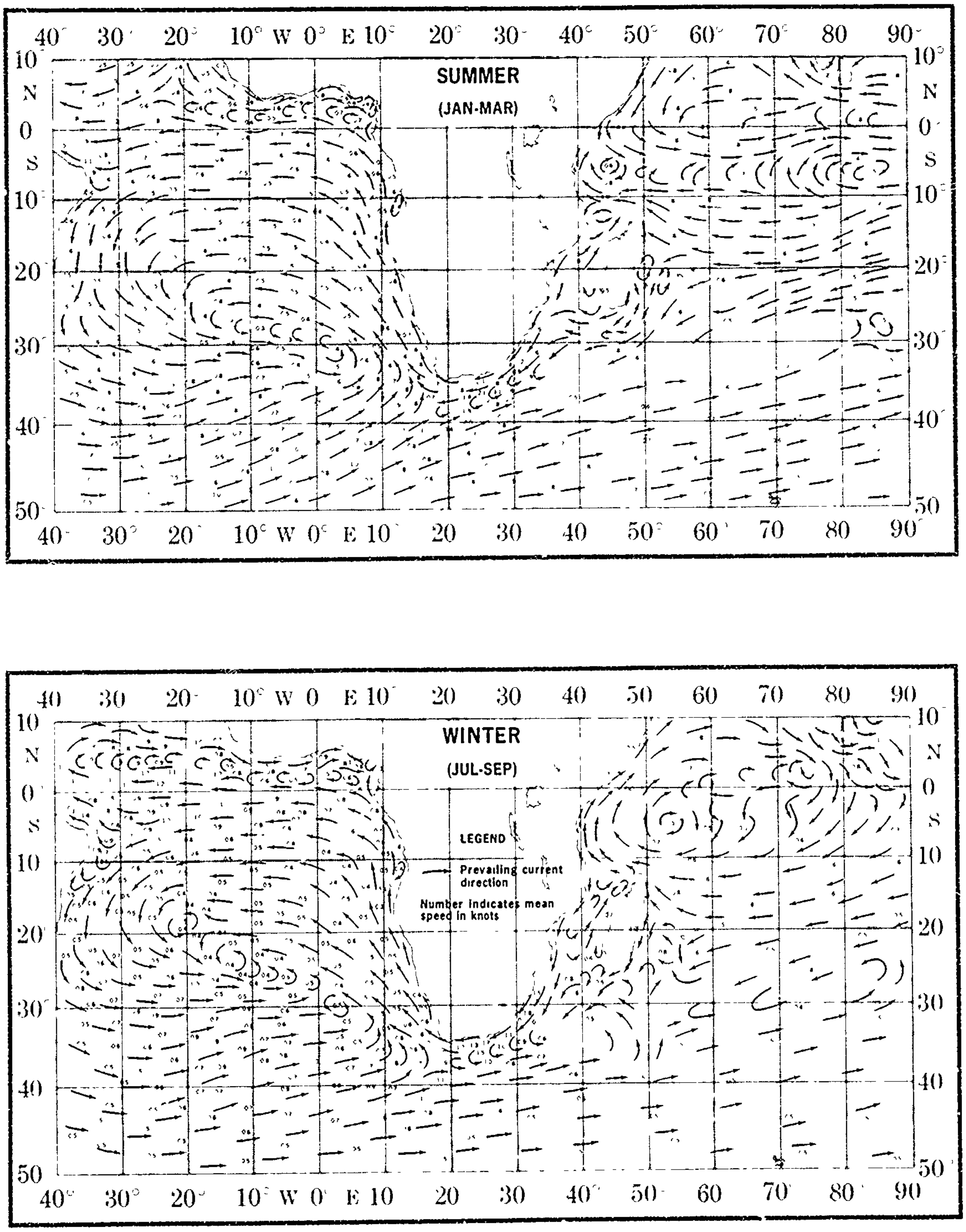


Figure 2. Surface Currents (Summer and Winter)

Central highlands extend the length of Madagascar. The highest peak is Mt. Tsaratanana, on the northern end of the island at 9436 feet. These central highlands rise gradually from the relatively wide west coast plain but drop rather abruptly from the plateau to the narrow coastal plain on the east.

In Tanzania, highlands are found in both the northern and southern sections of the country while the central area is basically a dry plateau. The coastal plains with elevations of 1500 feet or less are rather extensive in the central and southern regions where the beaches are sandy and highly developed coral reefs are found. Rufiji, the largest river in Tanzania drains the southern highlands and most of the remaining southern region. However, it is a minor river when compared to any of the three great rivers of Africa, the Nile, Congo or Zambezi. It does, however, have good potential for irrigation and hydroelectric power.

Mozambique, which extends the full length of the Mozambique Channel, consists nearly half as lowlands, 10 percent mountains along its western boundary, and the remainder as plateau. The country is essentially divided in half (north and south) by the Zambezi River which originates in Angola and provides access to the interior of Africa from the east. Although there are more than 25 other rivers within the country that drain into the Indian Ocean, none are navigable. Because of the variability in rainfall, especially in the southern regions, river flow is highly variable with the region occasionally experiencing severe droughts and floods. Mozambique's coastal region is also known for its sandy beaches much as those of Tanzania to the north.

Farther south one finds a narrow coastal belt along the east coast of South Africa with a vast plateau region inland. Numerous rivers flow from the edge of the plateau into the Indian Ocean but unlike the majority of the rivers in Mozambique, these have little potential for either irrigation or power generation.

Reference Figure 3 for an overview of the general topography across the entire study area.

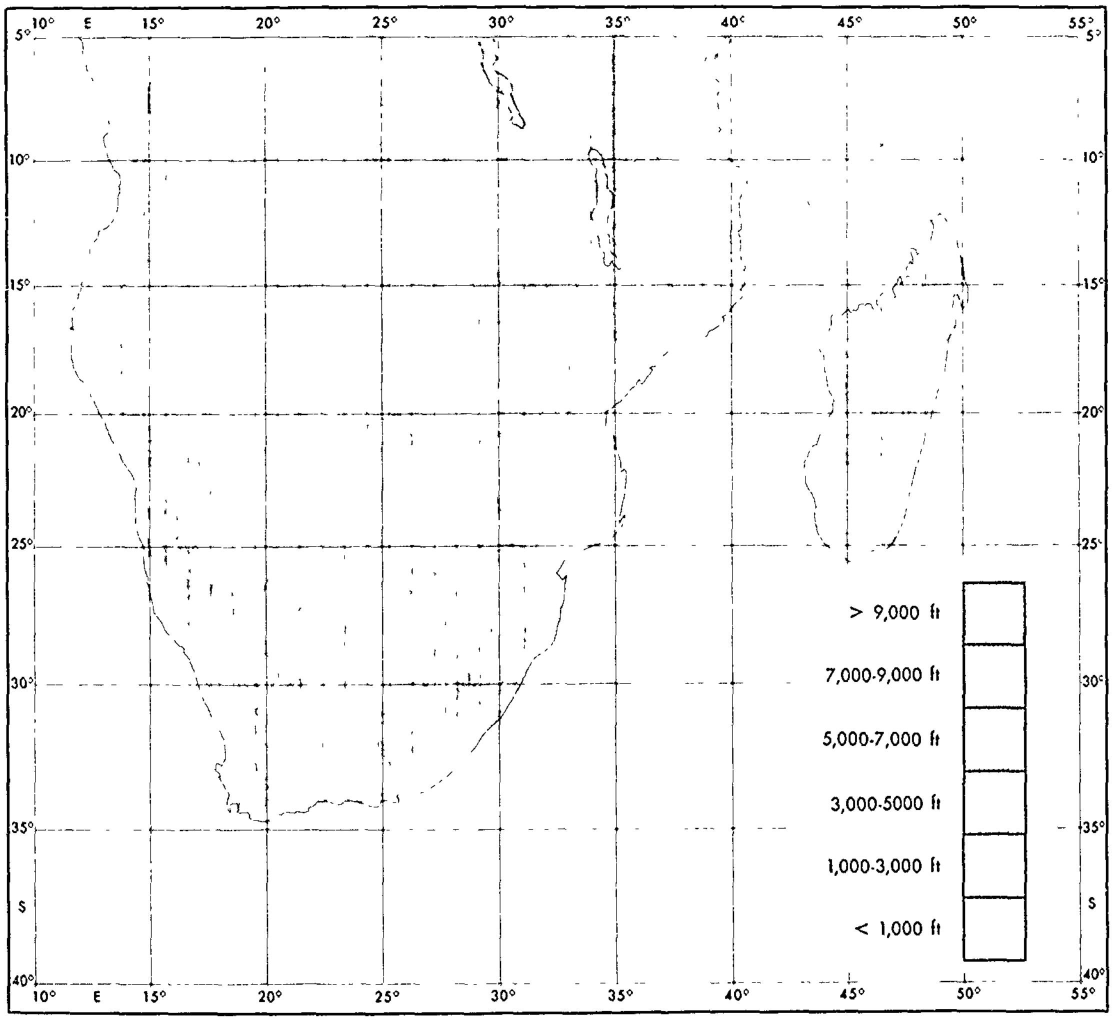
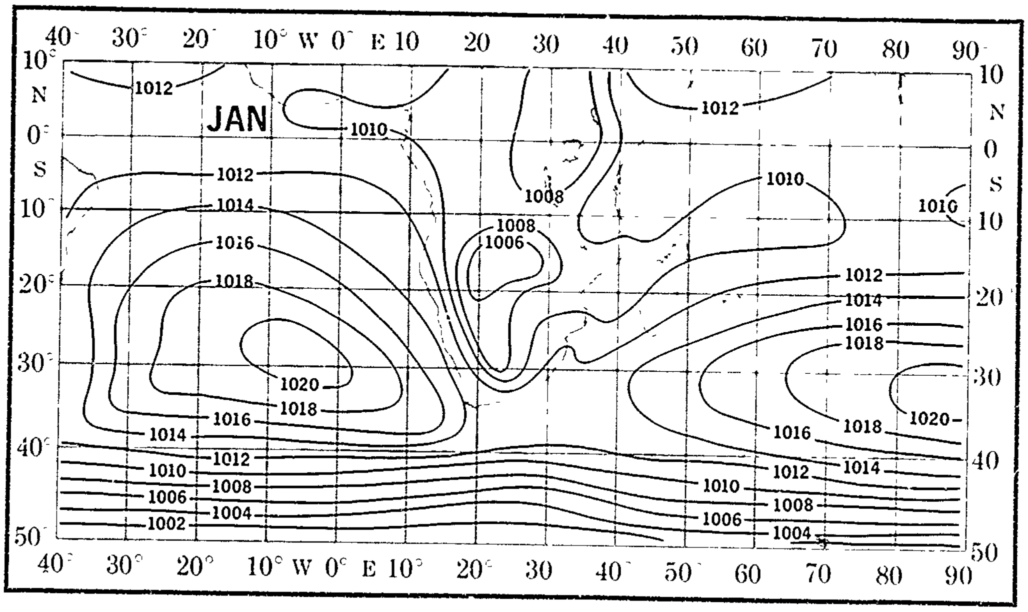


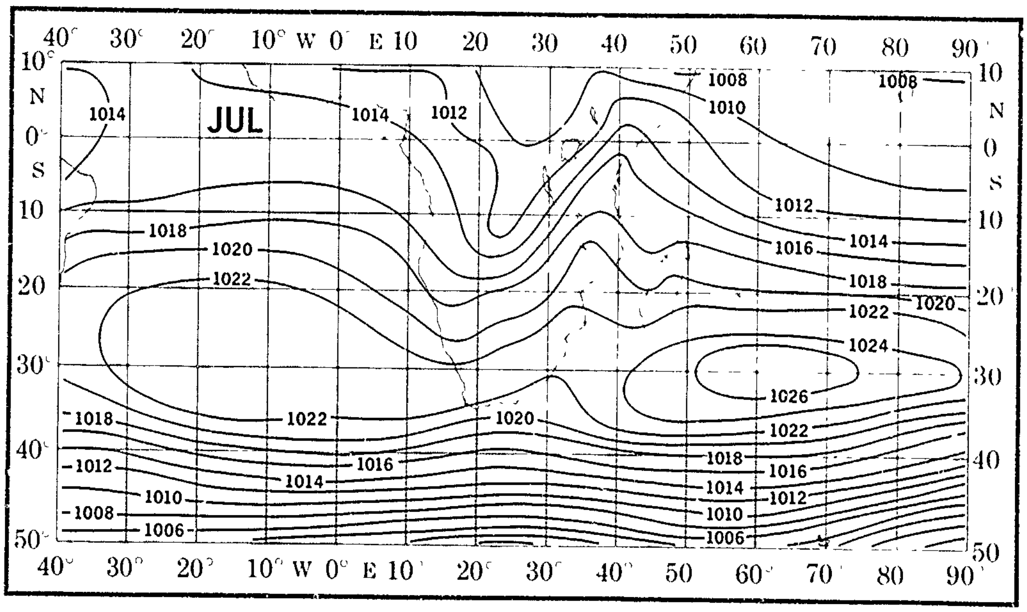
Figure 3. Topographic Chart

Climate

The climate of the study area is greatly influenced by the placement of the semi-permanent southern hemisphere subtropical highs to the east and west of Africa (see Figure 4) and the large north-south annual displacement of the Intertropical Convergence Zone (ITCZ). Summer brings the greatest precipitation as the ITCZ lies over central Mozambique and northern Madagascar creating instability showers and thunderstorms. The rainy season (October-April) is known as the northern monsoon while the dry season (May-September) as the southern monsoon. These labels naturally come from the prevailing air flow during these periods. Rainfall amounts decrease significantly across the entire region during the dry season with decreases as much as 80 to 95 percent across eastern Africa, and central and western Madagascar. Along the narrow coastal strip of eastern Madagascar, the decrease in rainfall between the two monsoon seasons is less pronounced than in other areas because of the influence of the easterly trade winds, which help sustain monthly averages of 3 to 8 inches during the dry season.

In general, annual precipitation values average from less than 15 inches in central Tanzania and portions of southern Mozambique to over 60 inches in the higher elevations of both countries. Least rainfall within the study area is observed in the semi-arid southwest corner of Madagascar where annual amounts average under 12 inches. This is in contrast with the northeast coast of the island where amounts exceed 100





inches per year. The portion of the east coast of South Africa, within the Mozambique Channel study area, averages 30 to 40 inches of precipitation a year, the most for any region in South Africa.

Geographical location (relatively low latitudes) and the warm Mozambique Current help keep the annual temperature variations near sea level small. Much greater variability is naturally observed at the higher elevations. Summer temperatures average in the low 80's (°F) with daily maximum temperatures averaging in the low 90's (°F) and daily minimum temperatures in the mid-70's (°F). A greater temperature range is noted during the winter when a well defined north-south temperature gradient is established. Mean wintertime temperatures range from the high 60's (°F) in the south to the upper 70's (°F) in the north. Daily minimum temperature average in the low 50's (°F) to the high 60's (°F) with daily maximum temperatures generally averaging in the low 80's (°F).

Figure 5 presents the monthly means of air temperature and precipitation for a number of stations within the study area giving a pictorial of the discussion in the previous three paragraphs.

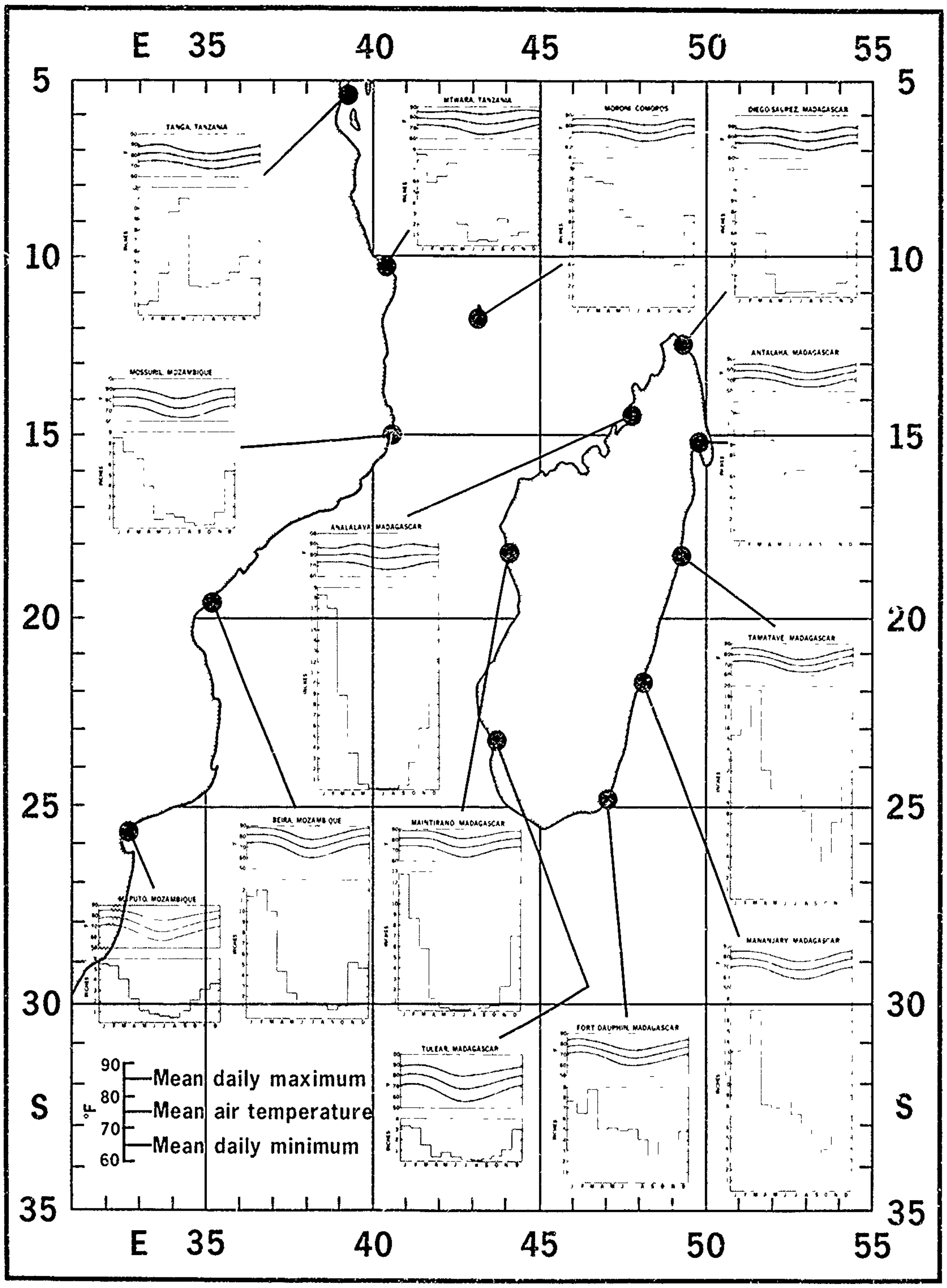


Figure 5. Monthly means of air temperature and precipitation

The main tropical cyclone season for the southwest Indian Ocean basin is December through March with significant occurrences in April, October and November (Crutcher and Quayle, 1974). While most tropical cyclones remain east of Madagascar, some do track across the Mozambique Channel and east Africa. On average (Figure 6) just over one storm per 5 degree square per year is observed in the Mozambique Channel while east of Madagascar frequencies reach nearly 2.5 storms per year. Figure 7 shows the historical 12 hourly movement statistics by 5 degree square of tropical cyclones with wind speeds estimated to be 34 knots or greater. Tropical cyclones usually form to the northeast of Madagascar between 8° and 10° south. The most violent storms that eventually make landfall often strike the northeast corner of Madagascar, although no location on the island is safe from their potential devastation. Crossing the island usually weakens the storms significantly but on occasion they will regenerate upon reaching the sea.

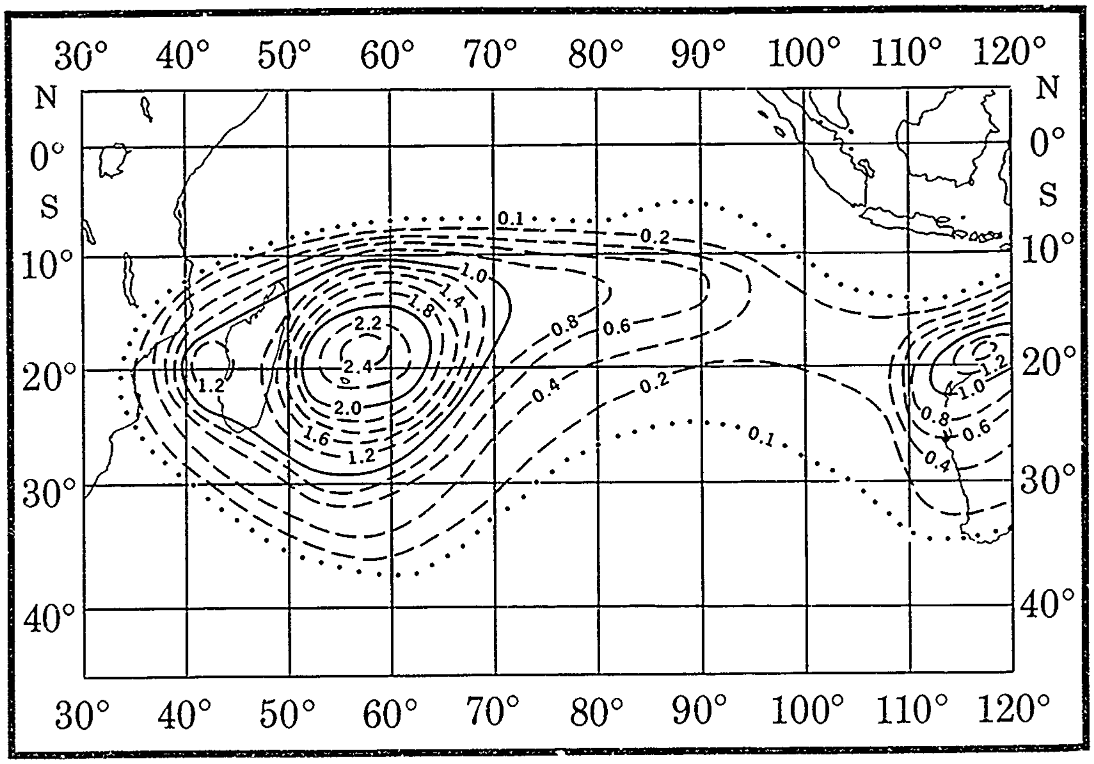


Figure 6. Average number of tropical cyclones per 5° square per year

Marine Climatological Elements

Precipitation

Of the elements recorded in the marine data base, precipitation is the one most subject to error in both the way it is observed and the way it is interpreted. For example, it is often inferred in the literature that ships often try to avoid foul weather and thereby bias the data towards fair weather with fewer precipitation observations. Elms (1986) compared the Volunteer Observing Ship (VOS) observations to other sources of data such as Ocean Station Vessel (OSV) and buoys, finding little evidence that "fair weather bias" is a serious problem for most applications of marine climatic data. With the introduction in 1982 of a present weather indicator (i_x) to the international Ship Synoptic Code FM13-VII, users have to be careful not to bias the data, especially that from between January 1982 and March 1985 when the indicator was inadvertently left out of the international data exchange format.

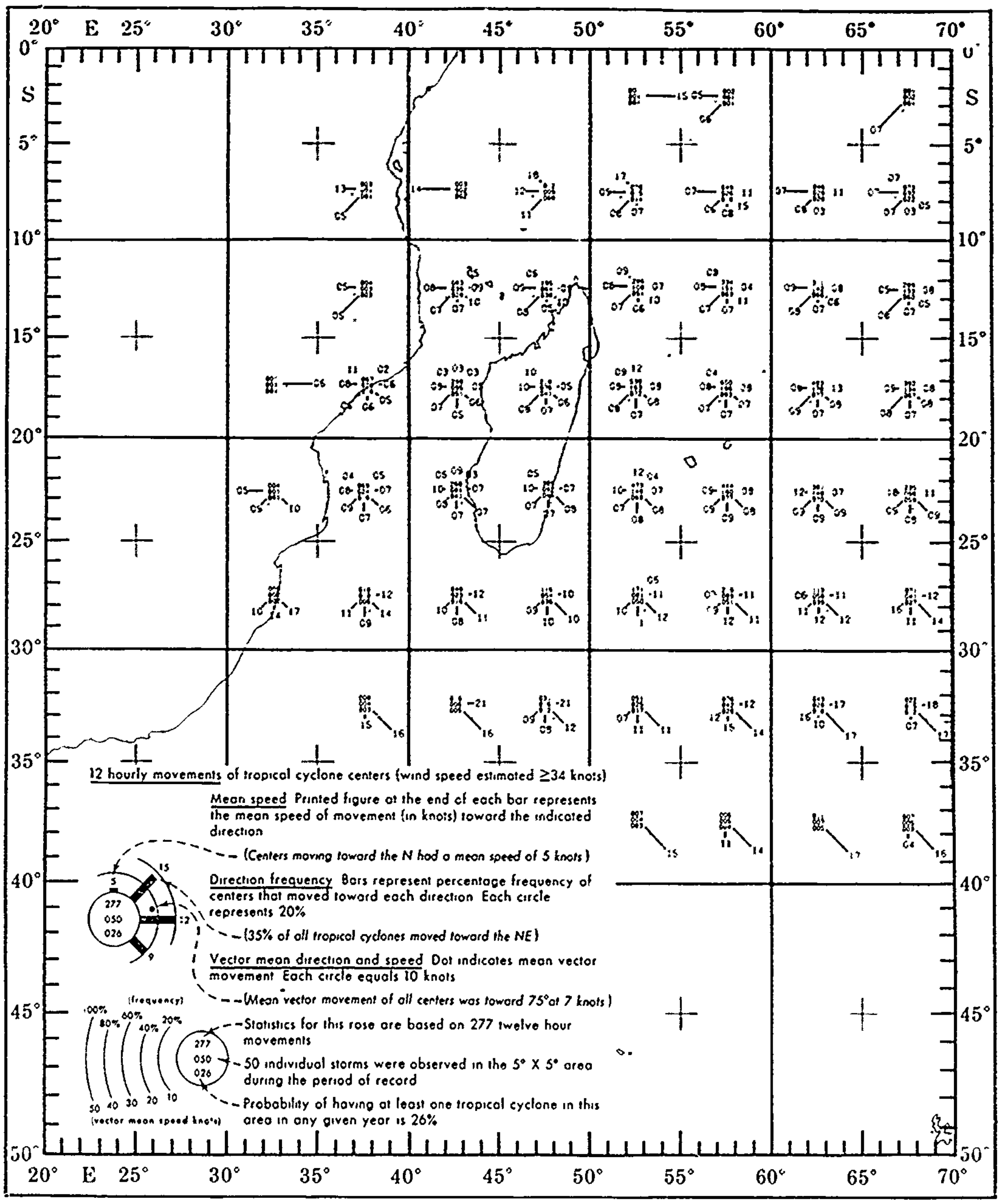


Figure 7. Annual 12 hourly movements of tropical cyclone centers with tropical storm intensity or greater

In comparing the frequencies given on the precipitation charts in this volume to those in the U.S. Navy Marine Climatic Atlas of the World, Volume III, Indian Ocean (Revised 1976), one will generally see a smaller percentage of present weather observations reporting precipitation. The major reason for this is that in the earlier publication the weather codes 20-27 (precipitation in the past hour) were counted in the precipitation frequencies in order to help correct an apparent observation bias. For this regional climatic study it was decided to present the data as reported. The higher frequencies (20-27 code included) certainly seem to agree better with those for land stations and OSV sites for most regions of the globe. The 1982 code change may also affect the frequencies. A more in-depth study is needed to help decide which method best represents the climate. At this point, however, it is possible only to bring the issue to the attention of the data users. Even without the coding problems, assessing oceanic rainfall data is a major problem because transit ships are unable to take quantitative precipitation measurements. A number of studies have been conducted in efforts to predict precipitation amounts, or rates of fall, based on estimates derived from the use of present weather observations from ships of opportunity (Goroch, et al., 1984) and readings from satellites (Rao, et al., 1976).

Air Temperature

Air temperature is one of the elements most frequently observed by mariners. It should be noted that on many ships the heating effect of the ship's structure has a tendency to produce higher than actual ambient air temperature readings because of instrument exposure (Folland et al., 1984; Wright, 1986). This is especially true under calm, sunny conditions. Therefore, some ship temperature observations have a warm bias; however, the aggregate is relatively representative after erroneous outliers have been eliminated and the numerous nighttime observations and unbiased daytime observations are included. Also, true extremes are rarely captured since continuous observations are not made at most ocean locations. It is highly unlikely that a ship-of-opportunity would be taking its synoptic weather observation at the exact time that an extreme was occurring.

Sea-Surface Temperature

Sea-surface temperatures are recorded with a fairly high frequency in marine observations. The principle methods for sampling are with ship water-intake thermometers and by reading the temperature of sea water retrieved with the buckets. Even though the two methods can produce slightly different results (Barnett, 1984), the data can be used with considerable confidence when examining the long-term means.

Surface Winds

Surface wind is one of the most commonly observed elements. Many of the observations from the NCDC data base are visual observations based on the roughness of the sea. In recent years, more ships acquired anemometers and reported measured winds. Prior to 1963, many observed wind speeds were recorded in the Beaufort scale; such estimates have proven to be quite reliable and can be used with a high degree of confidence. Five sets of wind speed isopleths are presented: the scalar mean speed and the percent of frequency of winds less than 11 knots, from 11 to 21 knots, from 22 to 33 knots, and greater than or equal to 34 knots. Also given are wind roses for one-degree squares.

Visibility

Visibilities are difficult to measure at sea because of the lack of distance reference points. Climatically, many low visibility observations are probably missed because the observer is too busy with other duties (a contrasting form of fair weather bias). However, the coarseness of visibility (code) intervals helps to minimize the problem, thereby permitting the summarized data to be relatively consistent.

Clouds

A survey of the cloud data (total and low cloud amount) from the surface marine observation data base shows that the number of total cloud reports are significantly greater than that of low cloud amounts. This is because many of the early marine observations contain only total cloud amount. For the two presentations (total cloud amount $\leq$ 2/8, and low cloud amount $\geq$ 5/8), only those observations reporting both total and low cloud amounts were summarized. This helps eliminate problems introduced as a result of different size data sets (N-count). The use of satellite data helps to bolster confidence in the total cloud analyses because they show fairly close agreement with those analyses (U.S. Department of Commerce and United States Air Force, 1971).

Ceiling and Visibility

Aircraft-type ceilings are not available from marine observations. The ceilings are estimated from the height of the lowest cloud when low clouds cover more than half the sky. When the sky is totally obscured by rain, fog, dust, or other phenomena, the total obscuration is considered a ceiling with a height of zero. Mid-range ceiling and visibility charts (ceiling less than 1000 feet and/or visibility less than 5 nautical miles; ceiling less than 8000 feet and/or visibility less than 10 nautical miles) and low-range ceiling and visibility charts (ceilings less than 300 feet and/or visibility less than 1 nautical mile; ceiling less than 600 feet and/or visibility less than 2 nautical miles) are presented.

Wave-Heights

Wave-heights have been recorded in a consistent quantitative code since the late

1940's. The reluctance of many observers to take wave observations in the earlier years and the difficulty in estimating waves, especially in confused seas, make wave observations one of the least commonly observed elements. The observations are also subject to biases. Generally, the heights are too low, the periods too short, and the sea-swell discrimination poor (Quayle, 1980). The data in this study have not been adjusted for the suspected biases, but were processed through a quality control procedure wherein an internal check was made between wind speed and sea height. The data were also matrix-arrayed and apparent erroneous outlier data values were deleted from both the sea and swell data. Wave-height presentations include isopleth maps showing percent frequencies of wave-heights ≥ 3 feet and ≥ 8 feet. In addition, wave-height tables by one-degree square show frequencies by six wave-height categories. In these presentations, the higher of the sea or swell was selected for summarization. If heights were equal, the wave with the longer period was selected.

Ocean Currents

The ocean current charts were compiled from ship drift reports that were forwarded by the various merchant marines to the U.S. Naval Oceanographic Office. From those drift observations, the prevailing and secondary current directions, mean current speed, percent of total observations used to compute the primary and secondary directions, and the total observation count are presented by one-degree square. This information is presented on monthly charts with the study area being divided into four sections (pages) to ensure readability. The density of the observations is greatest along the major shipping routes and the reliability of the current charts is best in those areas. The data are considered most useful when used collectively, such as in summaries where a large number of observations are available.

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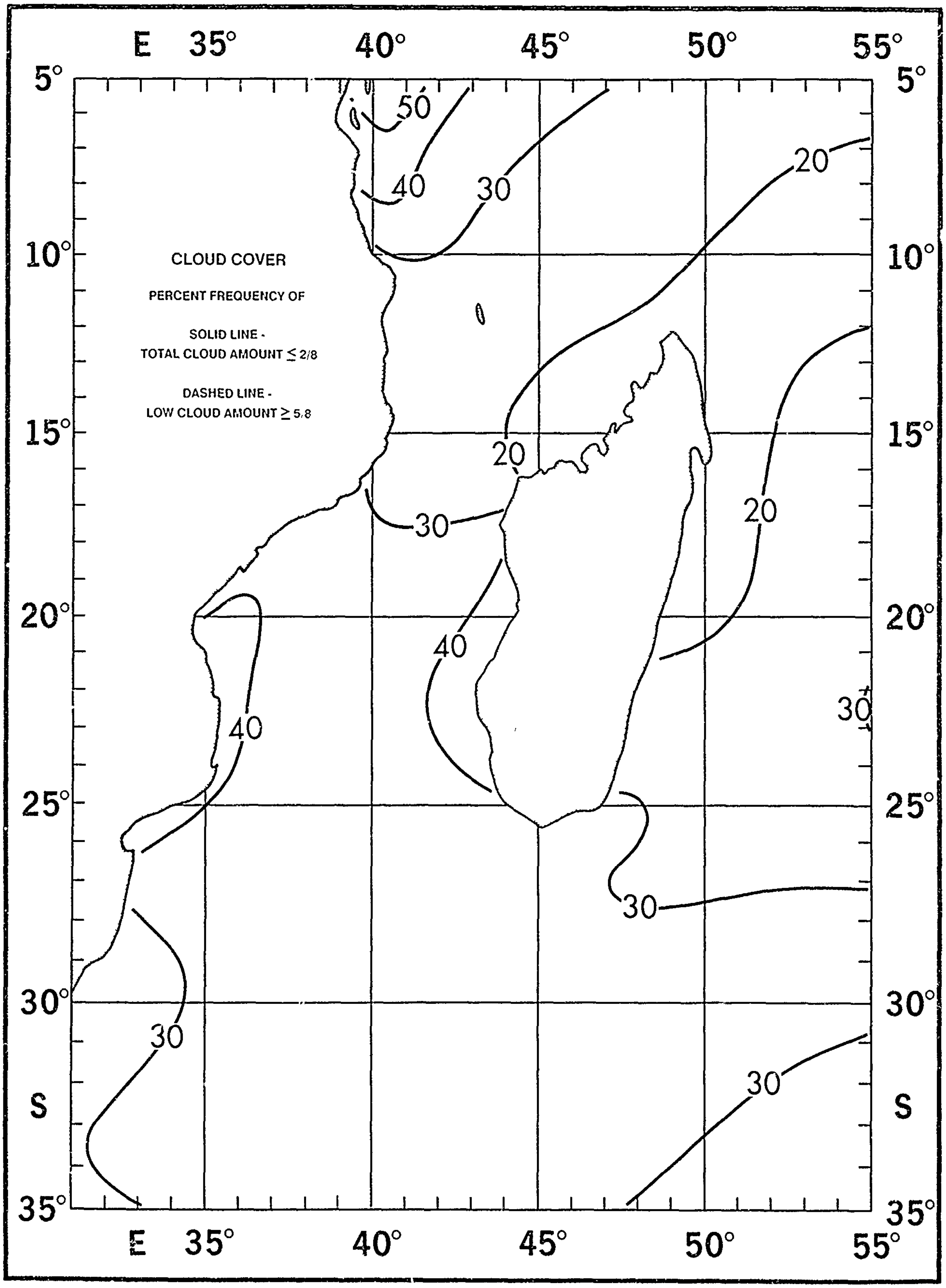
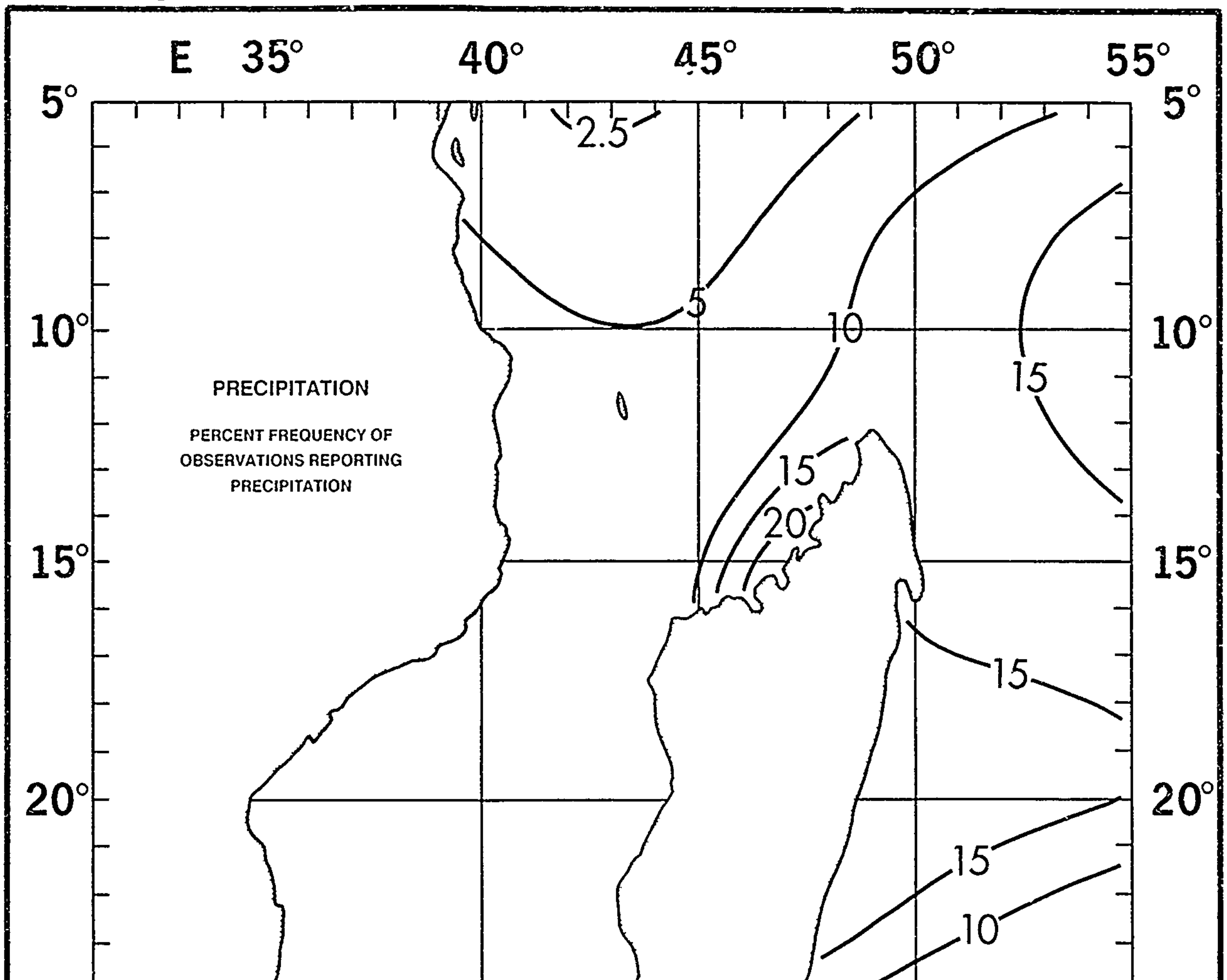
PAGE INDEX

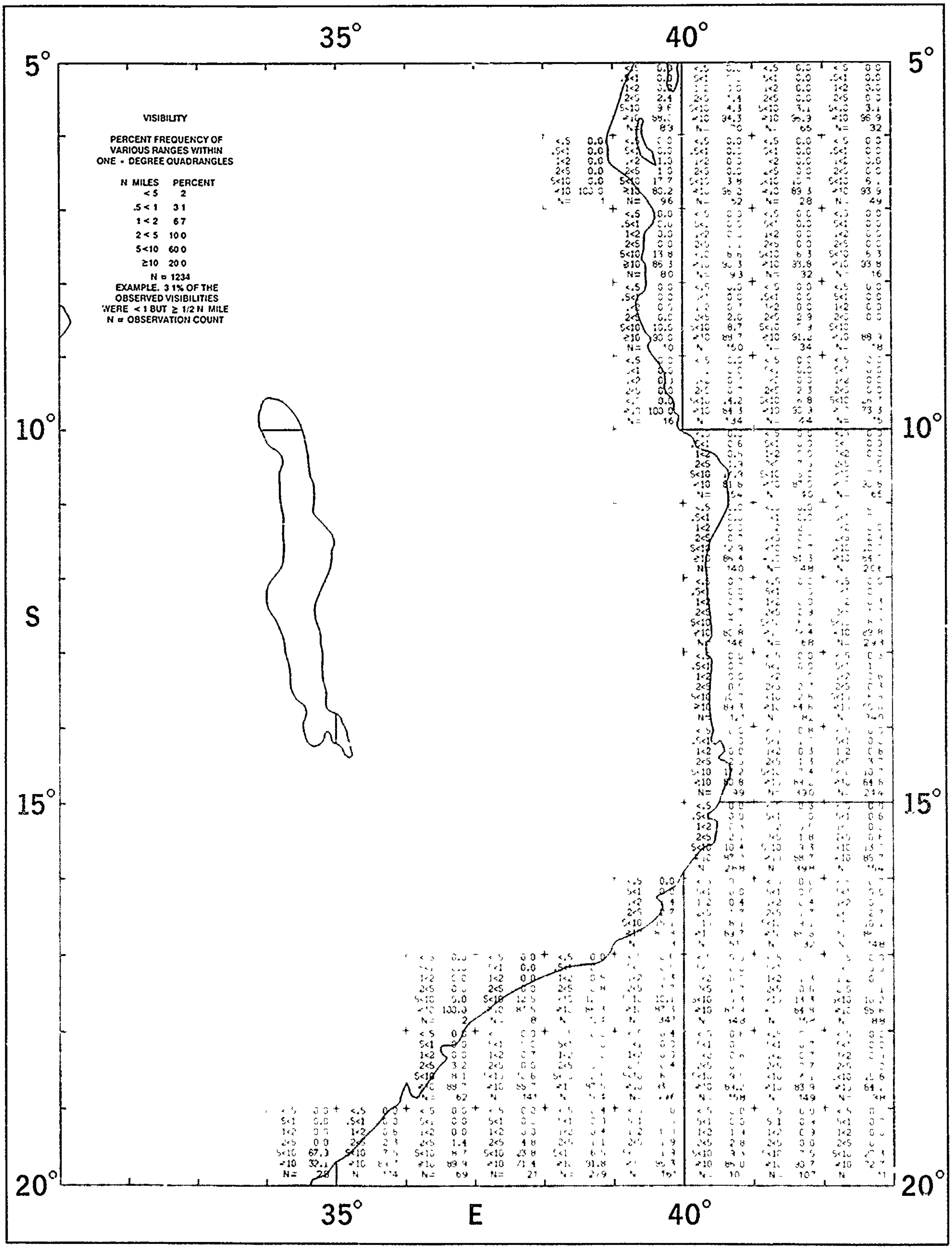
EXAMPLE. The 'MEAN SCALAR WIND SPEED' for July is found on page 167.

MONTH \ ELEMENT	CLOUDS	PRECIPITATION	VISIBILITY-TABLES	CEILING-VISIBILITY (mid range)	CEILING-VISIBILITY (low range)	WIND-VISIBILITY-CLOUDINESS	MEAN SCALAR WIND SPEED	WIND SPEED <11 and ≥ 34 KNOTS	WIND SPEED 11-21 and 22-33 KNOTS	SURFACE WIND ROSES	AIR AND SEA TEMPERATURE	WAVE HEIGHT-ISOPLETHS	WAVE HEIGHT-TABLES	SURFACE CURRENTS	STATION CLIMATIC SUMMARIES
JANUARY	2	3	4	8	9	10	11	12	13	14	18	19	20	24	314 thru 328
FEBRUARY	28	29	30	34	35	36	37	38	39	40	44	45	46	50	
MARCH	54	55	56	60	61	62	63	64	65	66	70	71	72	76	
APRIL	80	81	82	86	87	88	89	90	91	92	96	97	98	102	
MAY	106	107	108	112	113	114	115	116	117	118	122	123	124	128	
JUNE	132	133	134	138	139	140	141	142	143	144	148	149	150	154	
JULY	158	159	160	164	165	166	167	168	169	170	174	175	176	180	
AUGUST	184	185	186	190	191	192	193	194	195	196	200	201	202	206	
SEPTEMBER	210	211	212	216	217	218	219	220	221	222	226	227	228	232	
OCTOBER	236	237	238	242	243	244	245	246	247	248	252	253	254	258	
NOVEMBER	262	263	264	268	269	270	271	272	273	274	278	279	280	284	
DECEMBER	288	289	290	294	295	296	297	298	299	300	304	305	306	310	

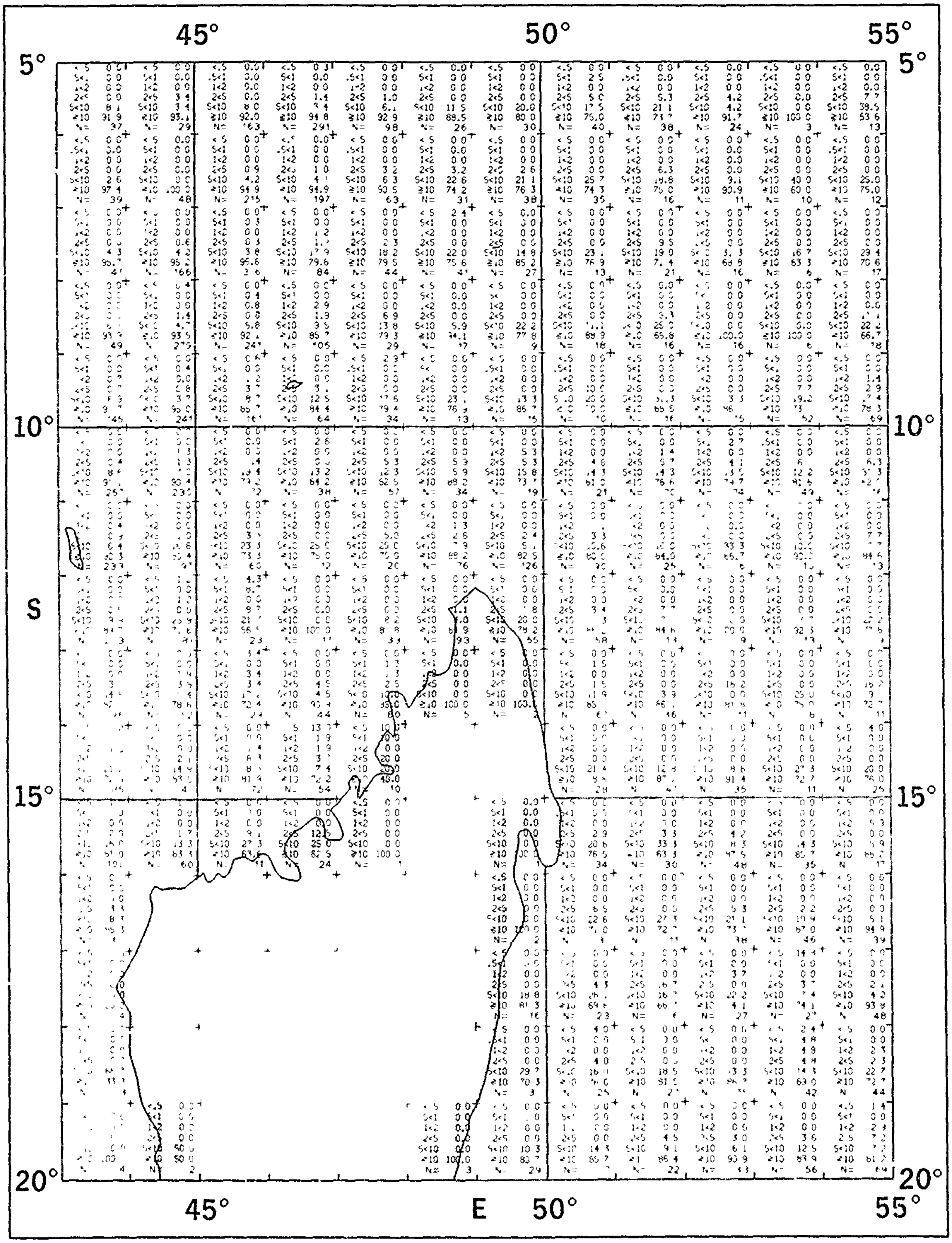

E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
CLOUD COVER
PERCENT FREQUENCY OF
SOLID LINE - TOTAL CLOUD AMOUNT ≤ 2/8
DASHED LINE - LOW CLOUD AMOUNT ≥ 5/8
50
40
30
20

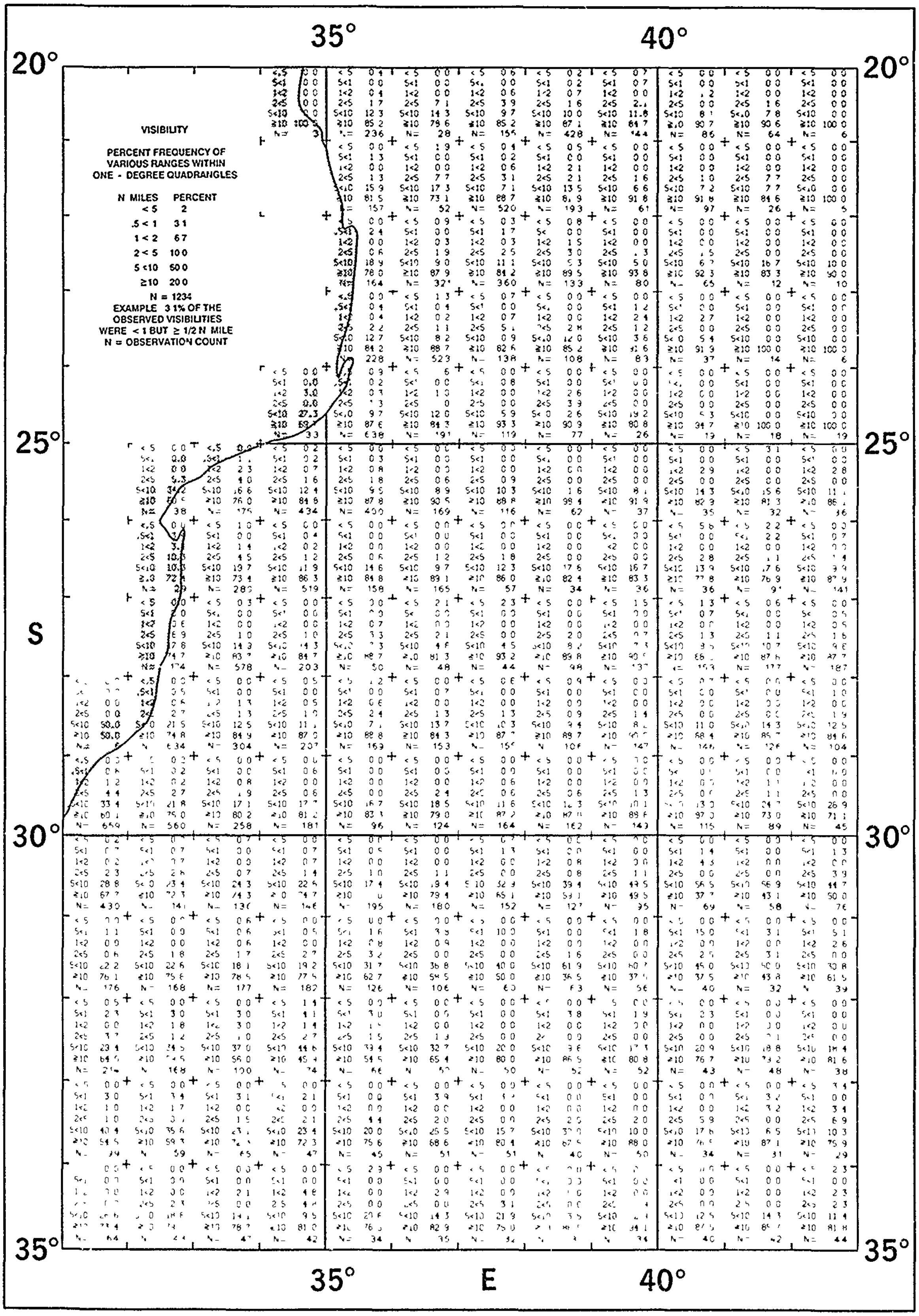
January Precipitation



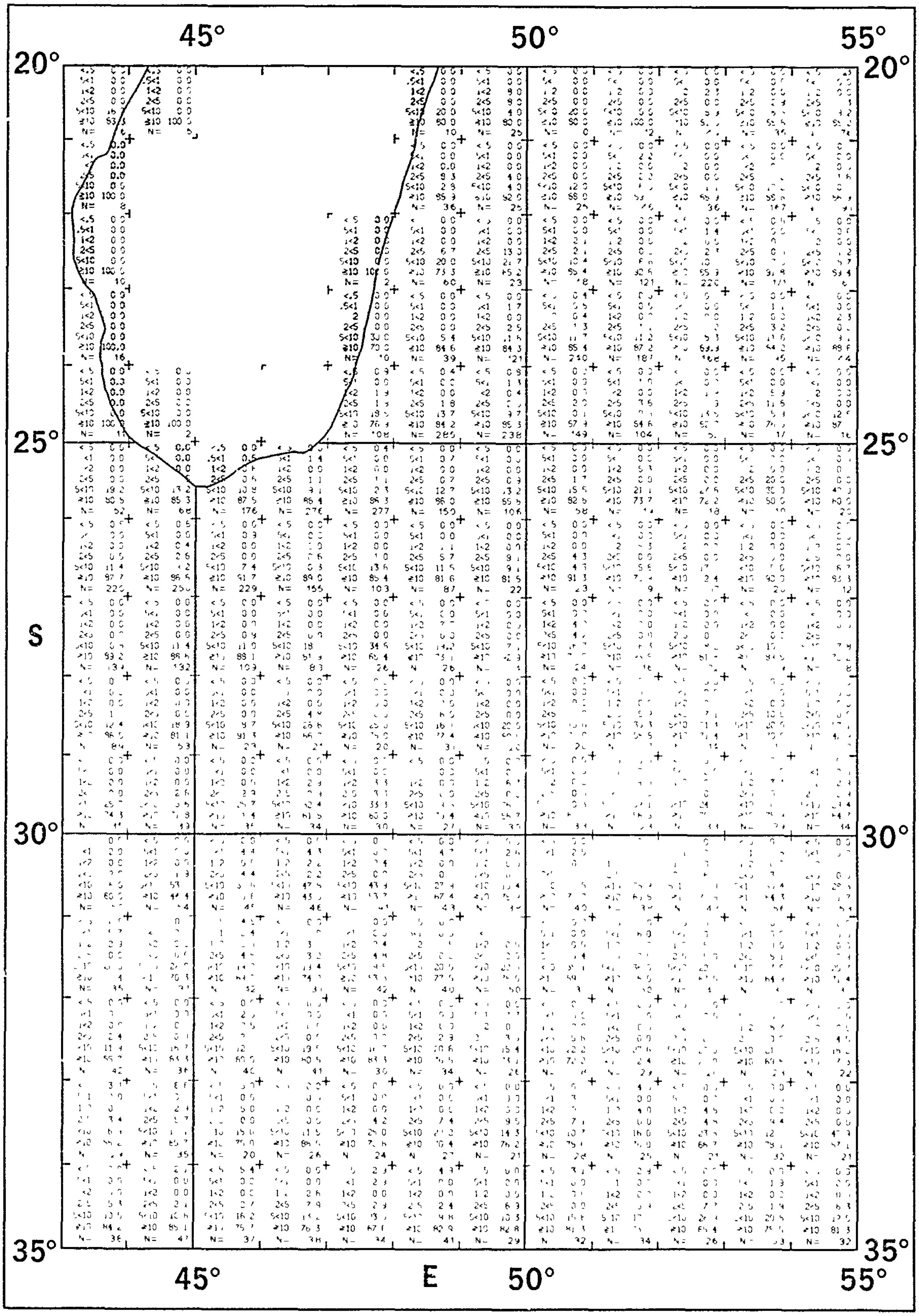

35°
40°
5°
10°
15°
20°
S
E
VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
<5 2
.5<1 31
1<2 67
2<5 100
5<10 600
≥10 200
N = 1234
EXAMPLE. 3.1% OF THE OBSERVED VISIBILITIES WERE <1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT

January **Visibility**

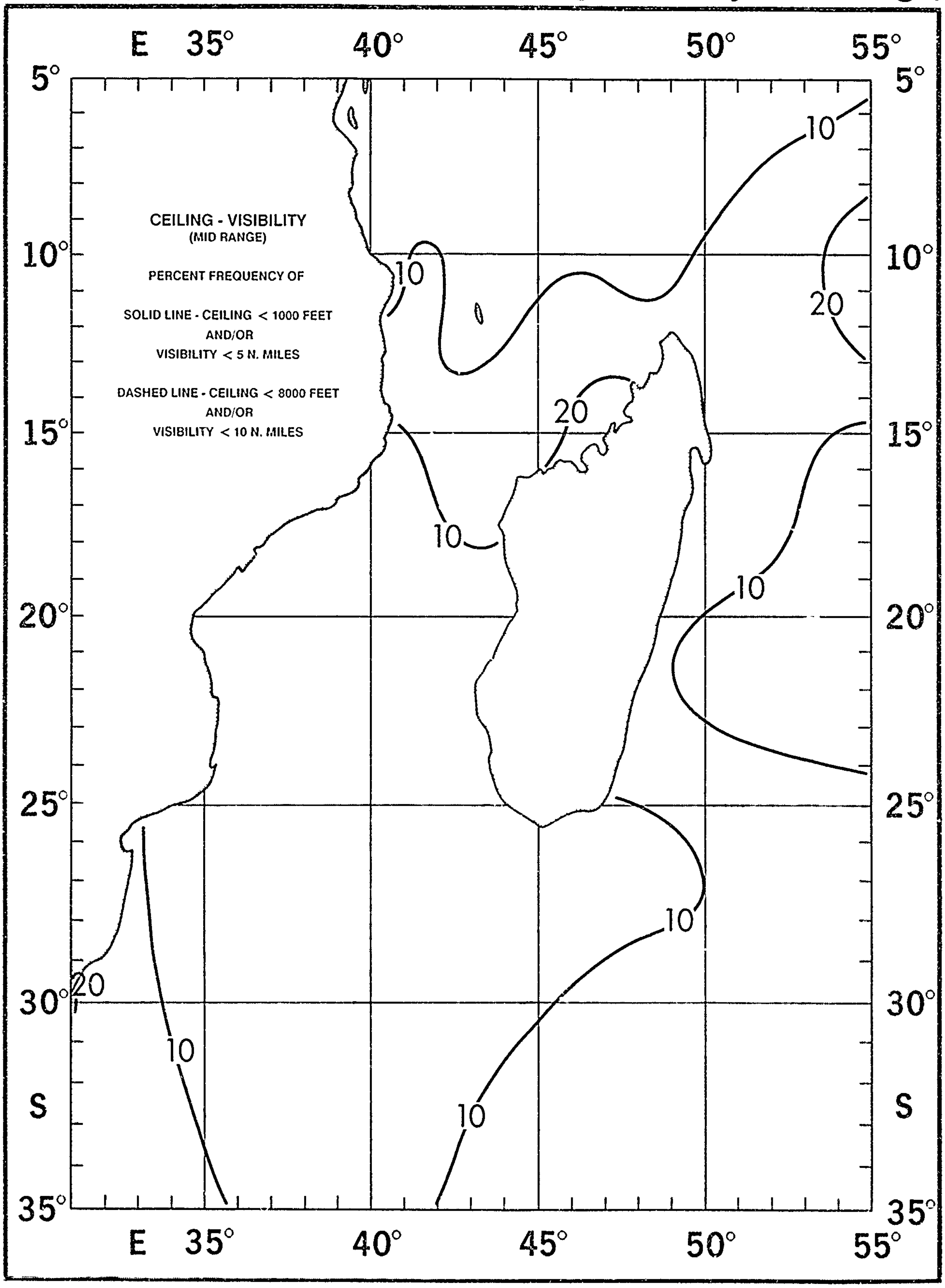


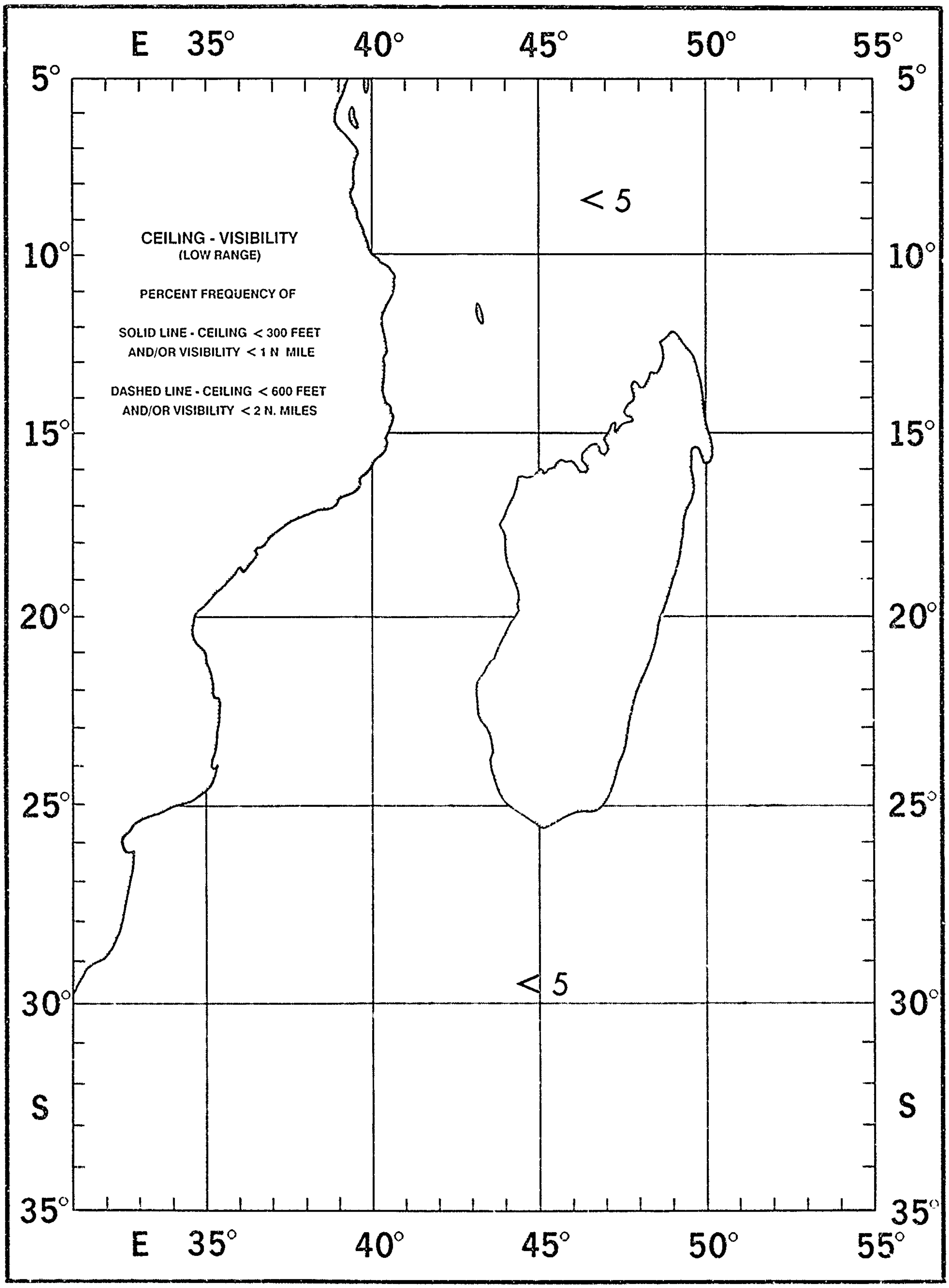

35°
40°
20°
20°
VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
< 5 2
.5 < 1 31
1 < 2 67
2 < 5 100
5 <10 500
≥10 200
N = 1234
EXAMPLE 3 1% OF THE OBSERVED VISIBILITIES WERE < 1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT
25°
25°
S
30°
30°
35°
35°
35°
E
40°

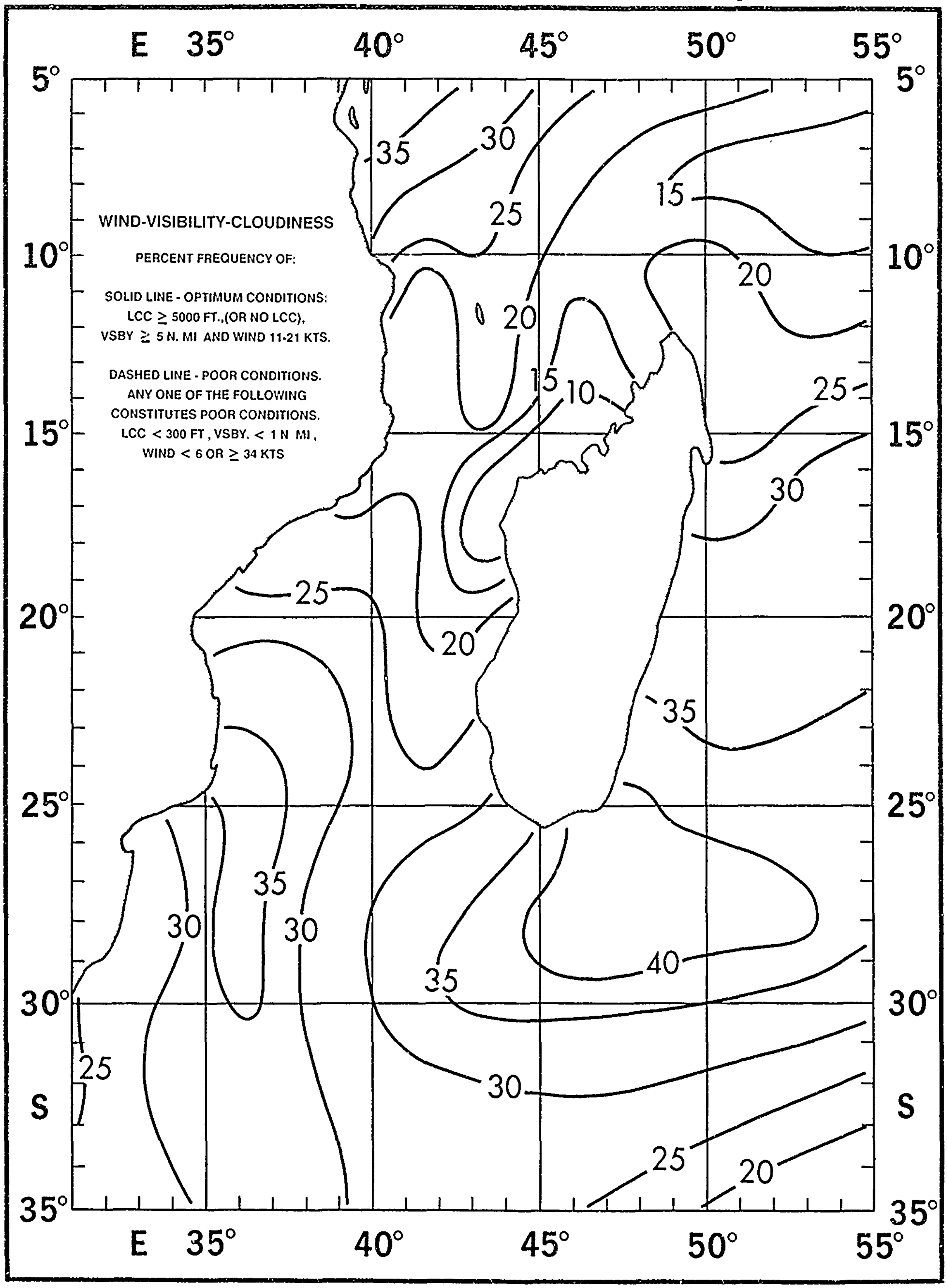
January Visibility



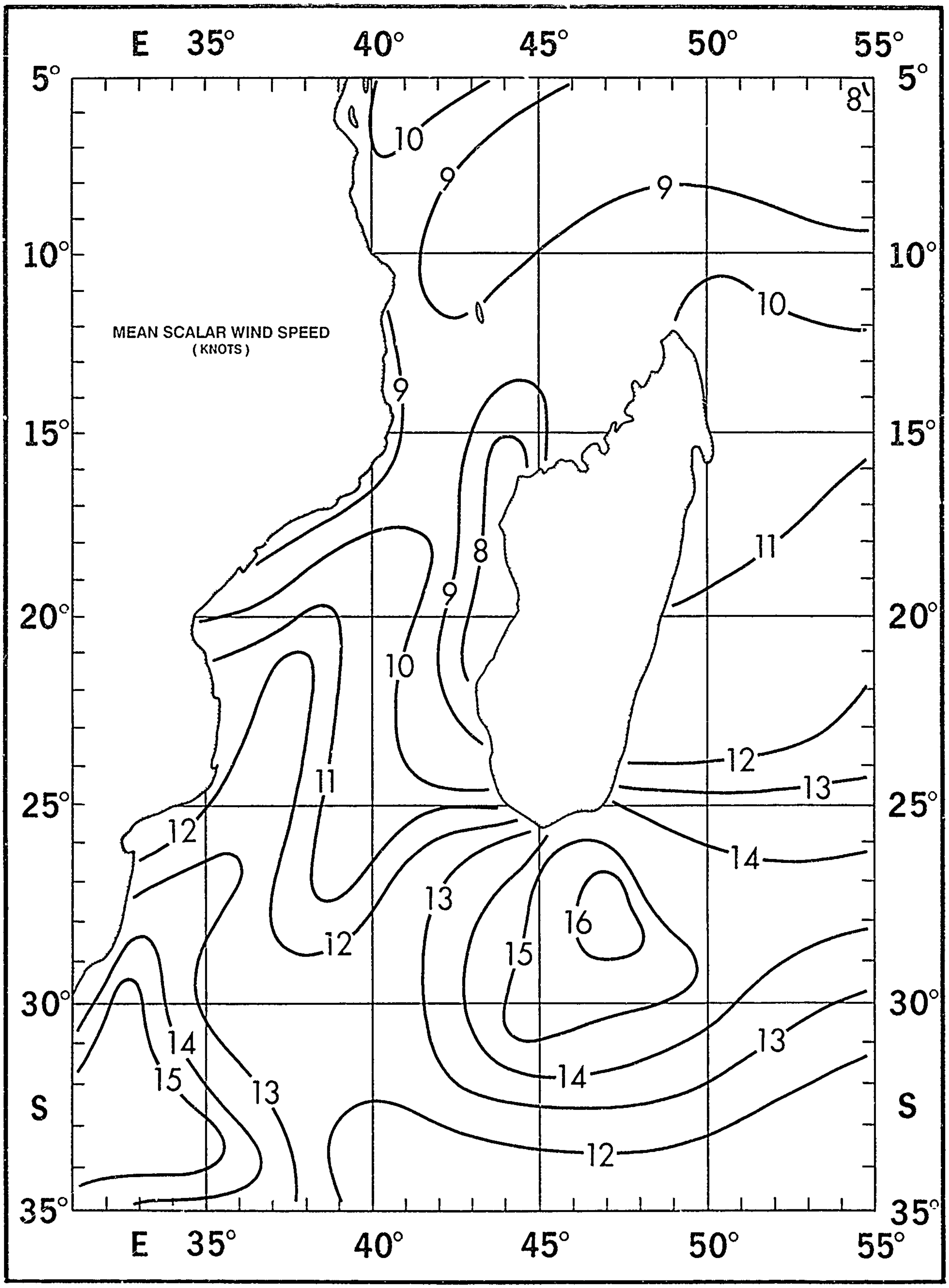
January   Ceiling - Visibility (Mid Range)



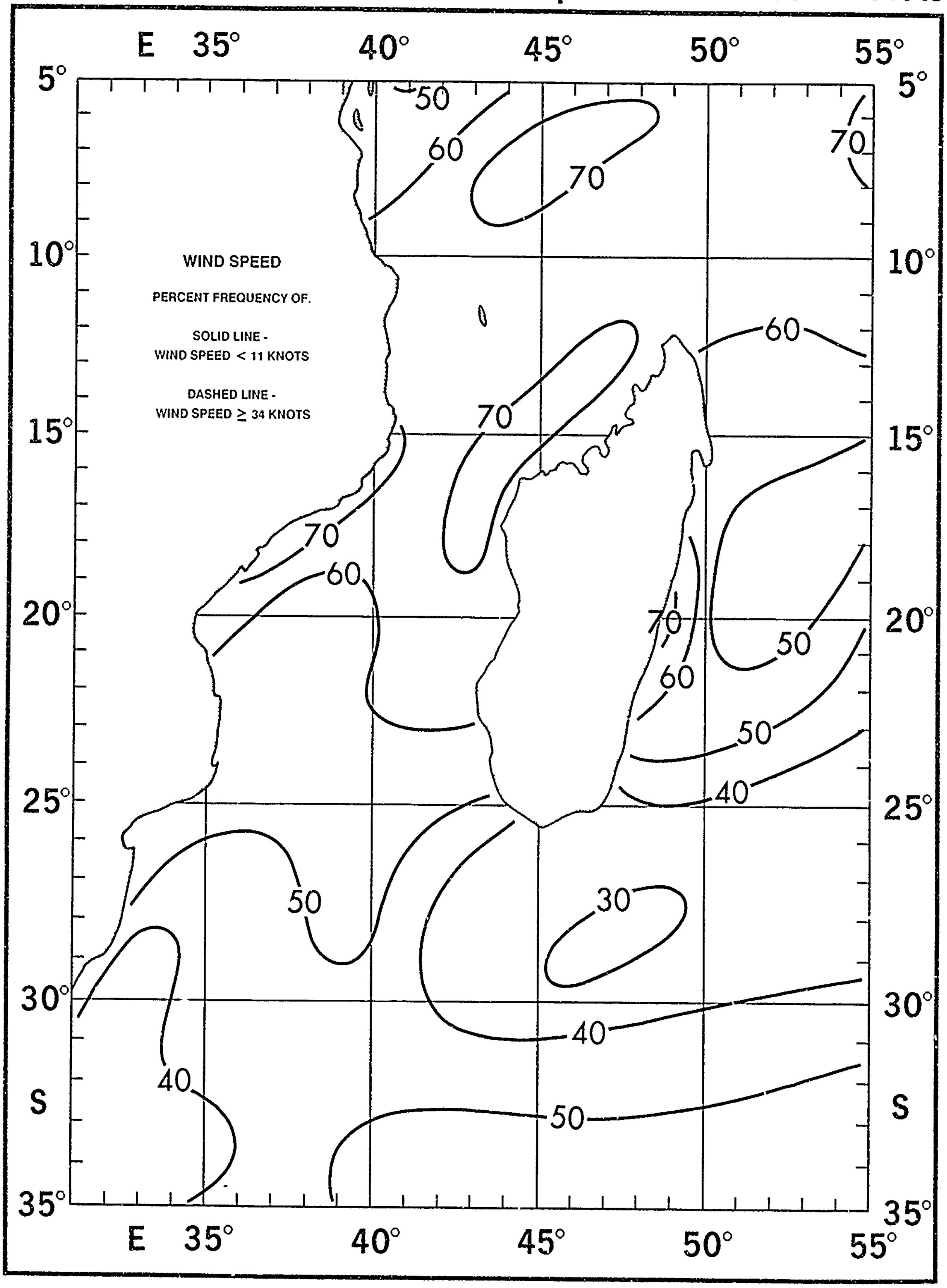

E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
CEILING - VISIBILITY
(LOW RANGE)
PERCENT FREQUENCY OF
SOLID LINE - CEILING < 300 FEET
AND/OR VISIBILITY < 1 N MILE
DASHED LINE - CEILING < 600 FEET
AND/OR VISIBILITY < 2 N. MILES
< 5
< 5


E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
WIND-VISIBILITY-CLOUDINESS
PERCENT FREQUENCY OF:
SOLID LINE - OPTIMUM CONDITIONS:
LCC ≥ 5000 FT.,(OR NO LCC),
VSBY ≥ 5 N. MI AND WIND 11-21 KTS.
DASHED LINE - POOR CONDITIONS.
ANY ONE OF THE FOLLOWING
CONSTITUTES POOR CONDITIONS.
LCC < 300 FT, VSBY. < 1 N MI,
WIND < 6 OR ≥ 34 KTS
35 30 25 15 20 10 40

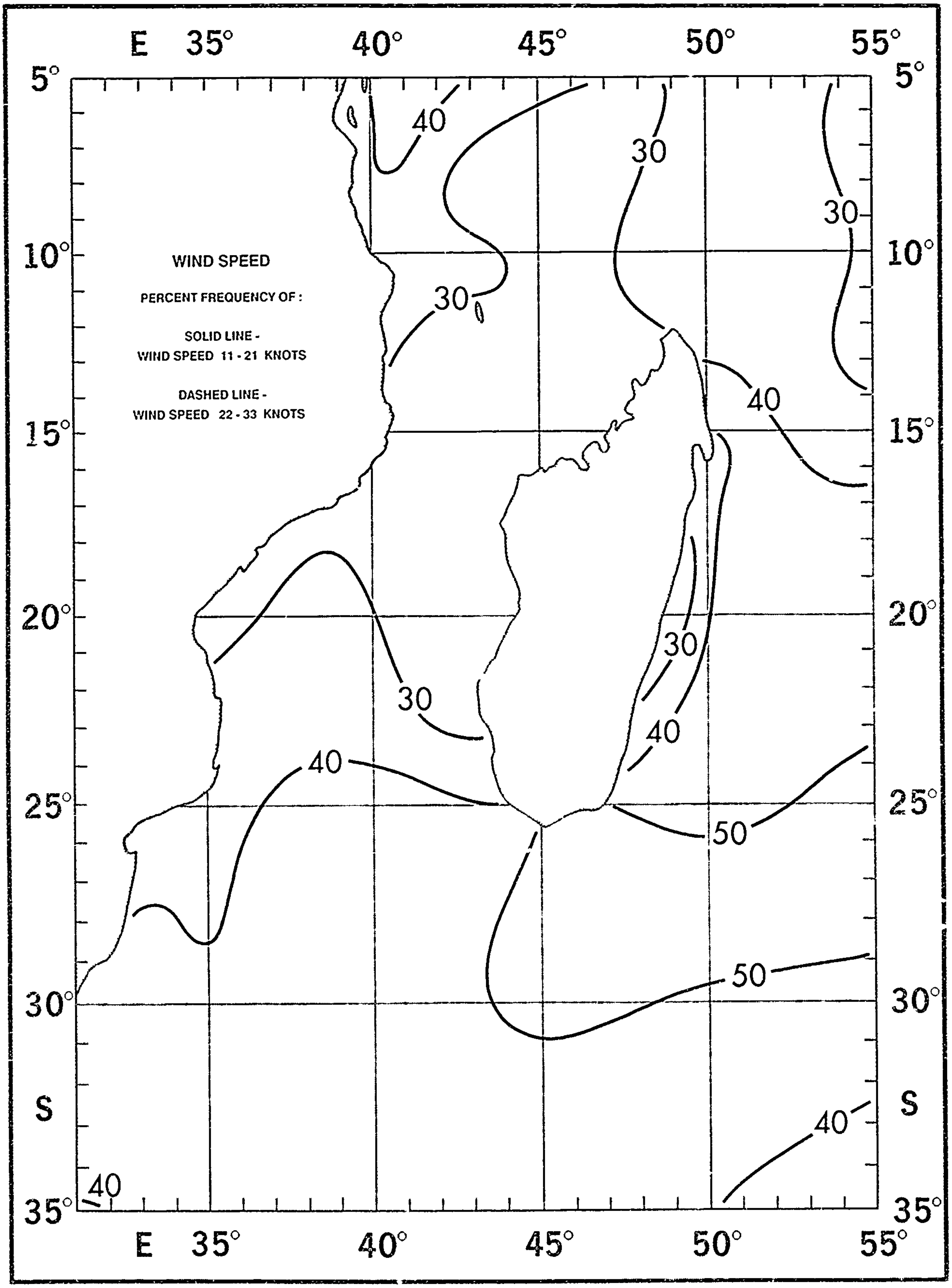
January — Mean Scalar Wind Speed

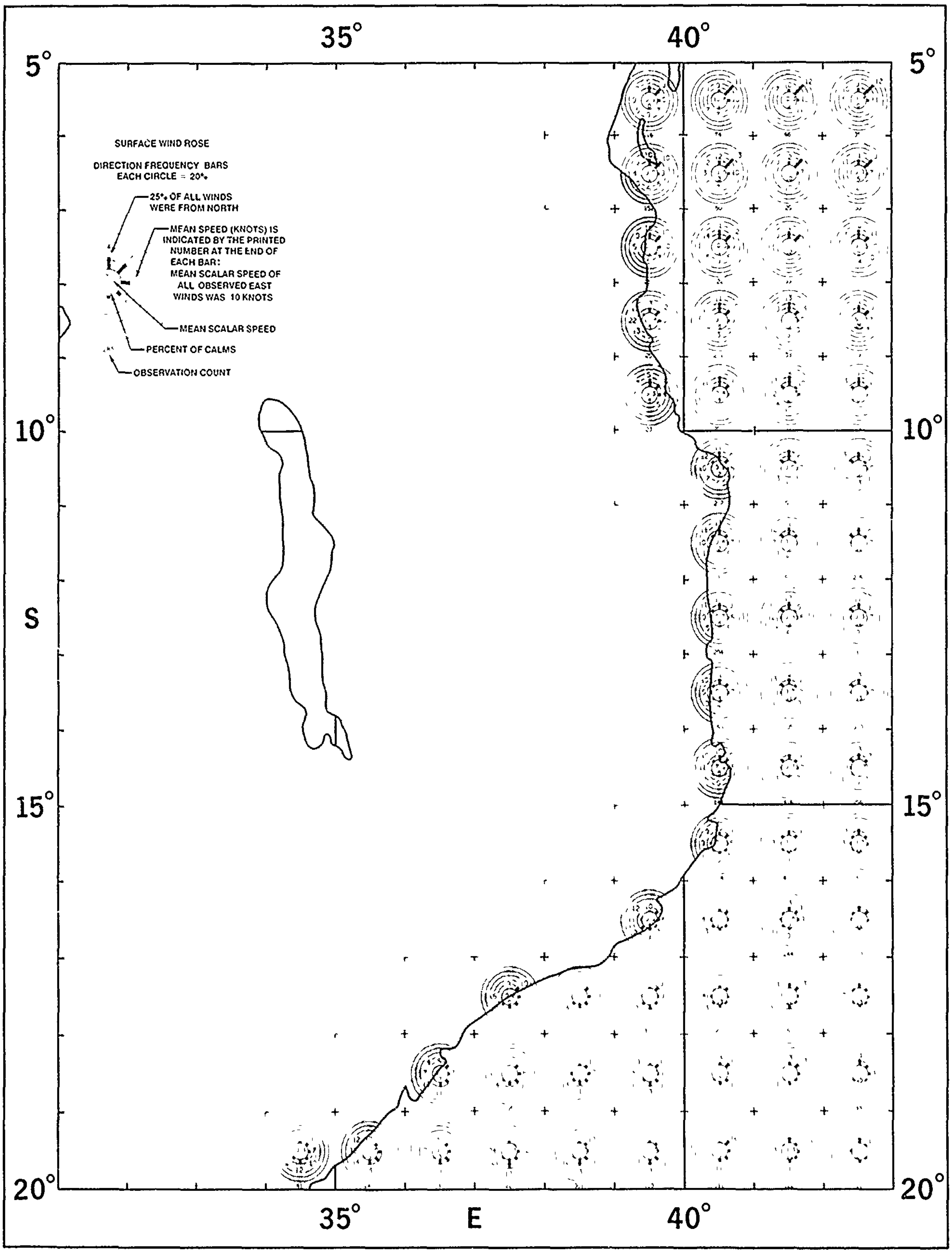


January   Wind Speed <11 and ≥34 Knots



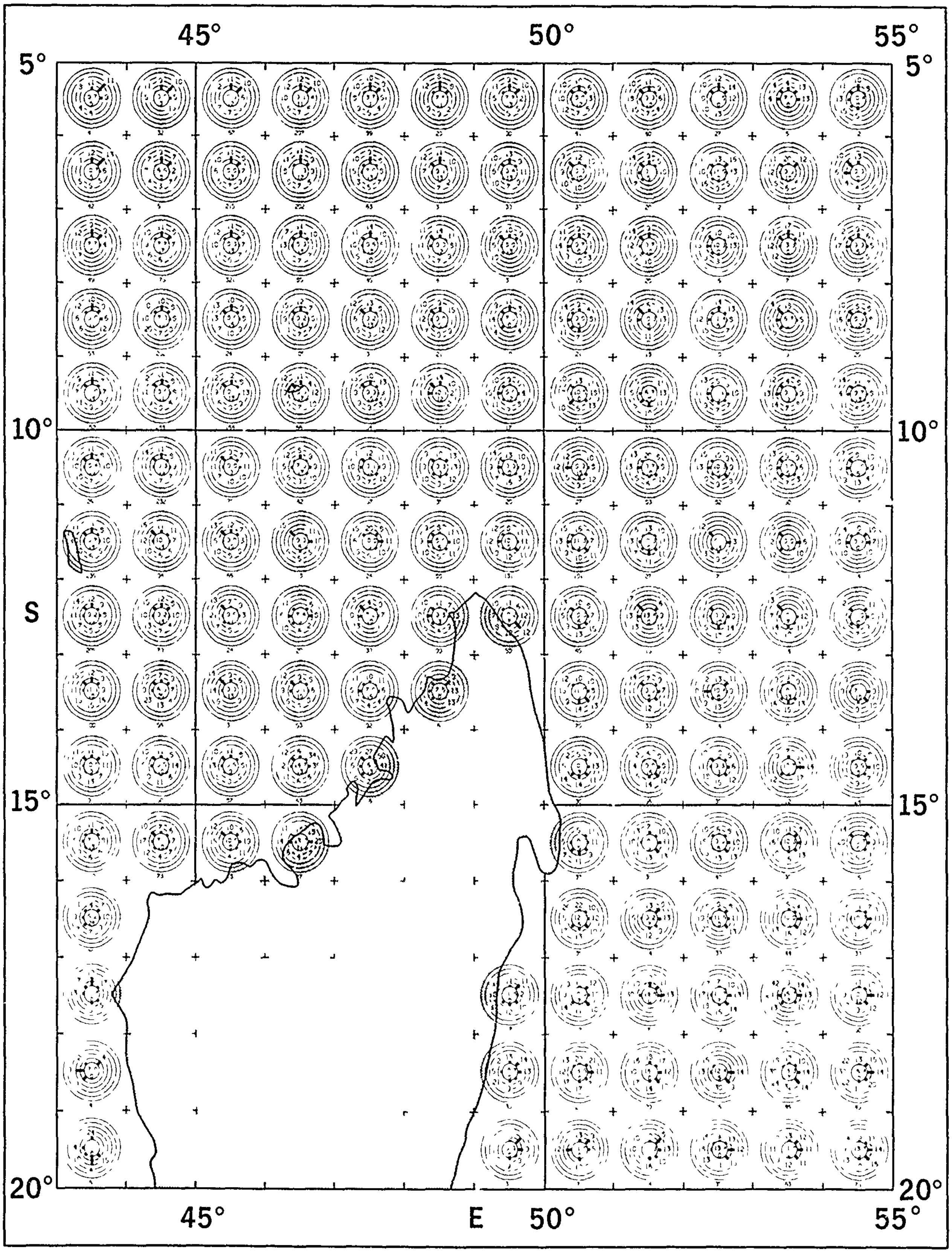
January — Wind Speed 11 - 21 and 22 - 33 Knots

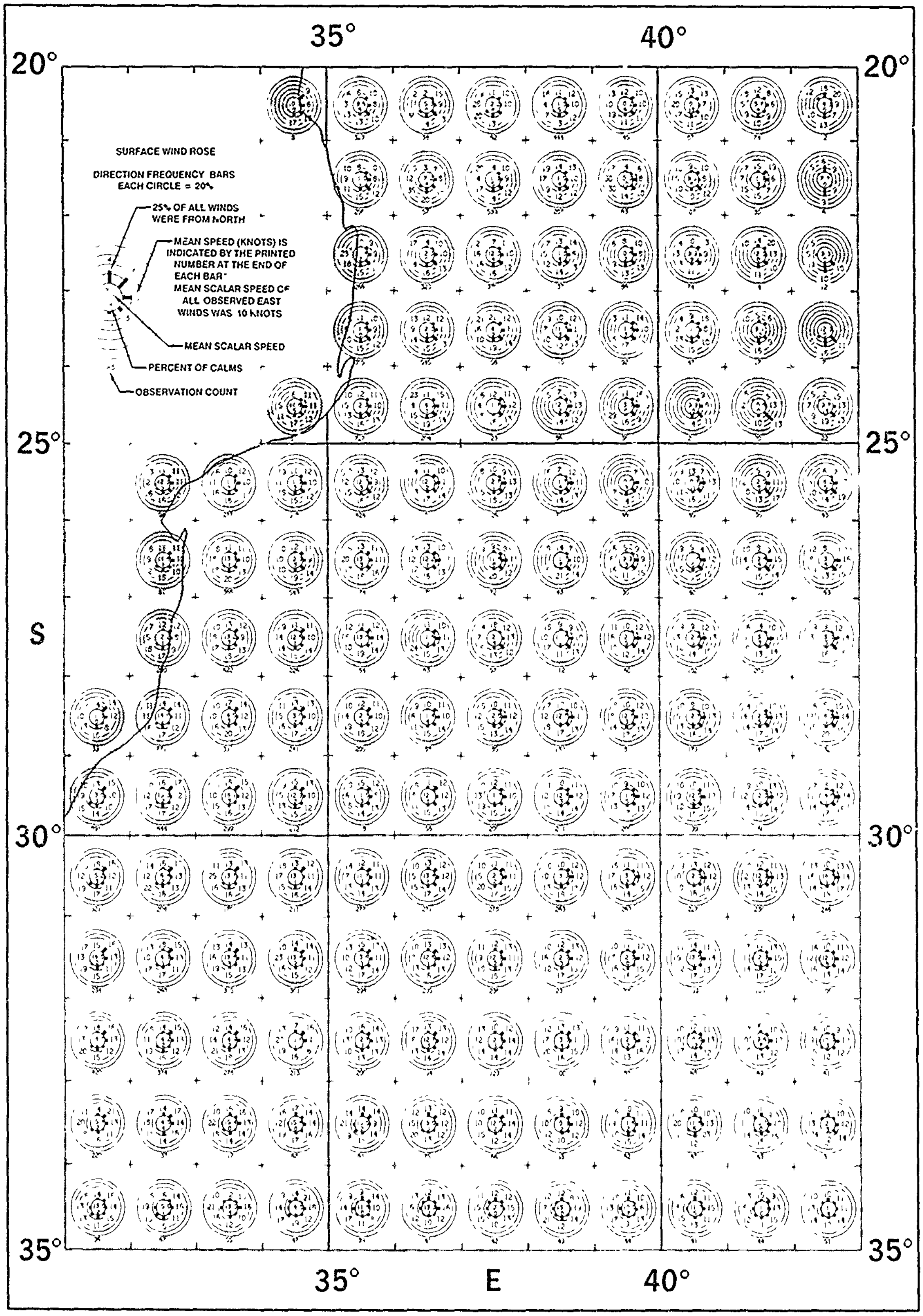


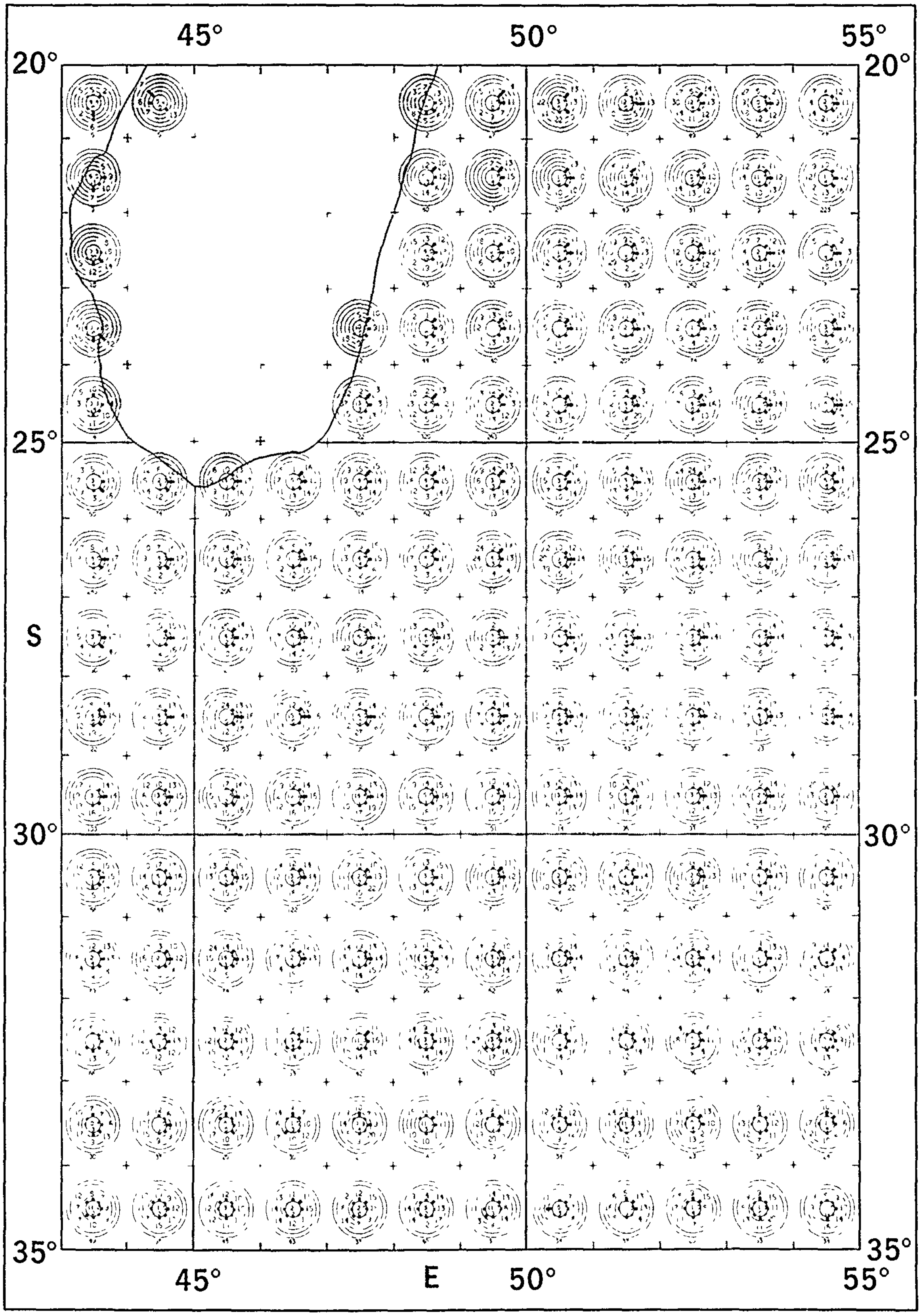

35°
40°
5°
5°
10°
10°
S
15°
15°
20°
20°
35°
E
40°
SURFACE WIND ROSE
DIRECTION FREQUENCY BARS
EACH CIRCLE = 20%
25% OF ALL WINDS
WERE FROM NORTH
MEAN SPEED (KNOTS) IS
INDICATED BY THE PRINTED
NUMBER AT THE END OF
EACH BAR:
MEAN SCALAR SPEED OF
ALL OBSERVED EAST
WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT

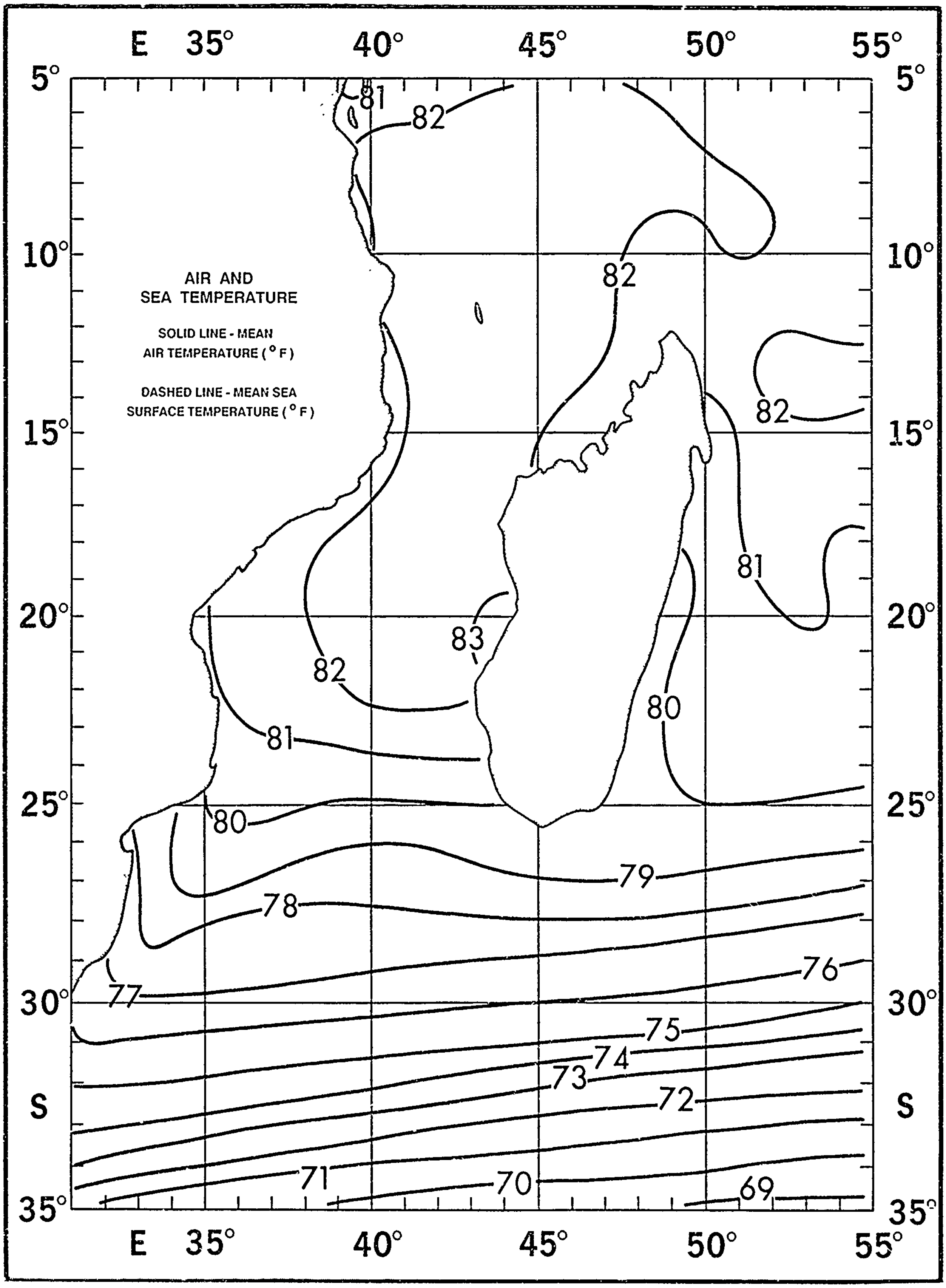
January

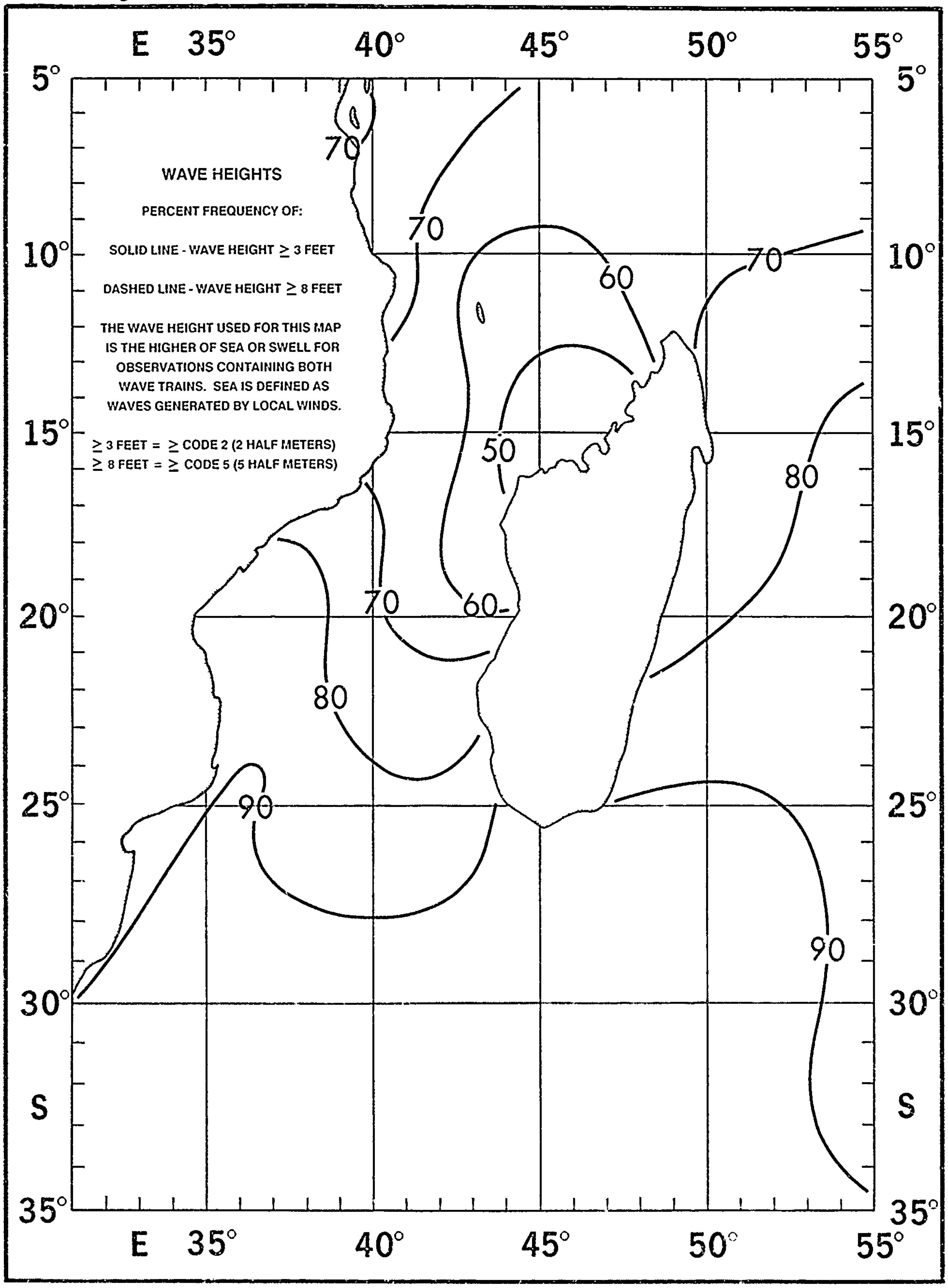
Surface Wind Roses



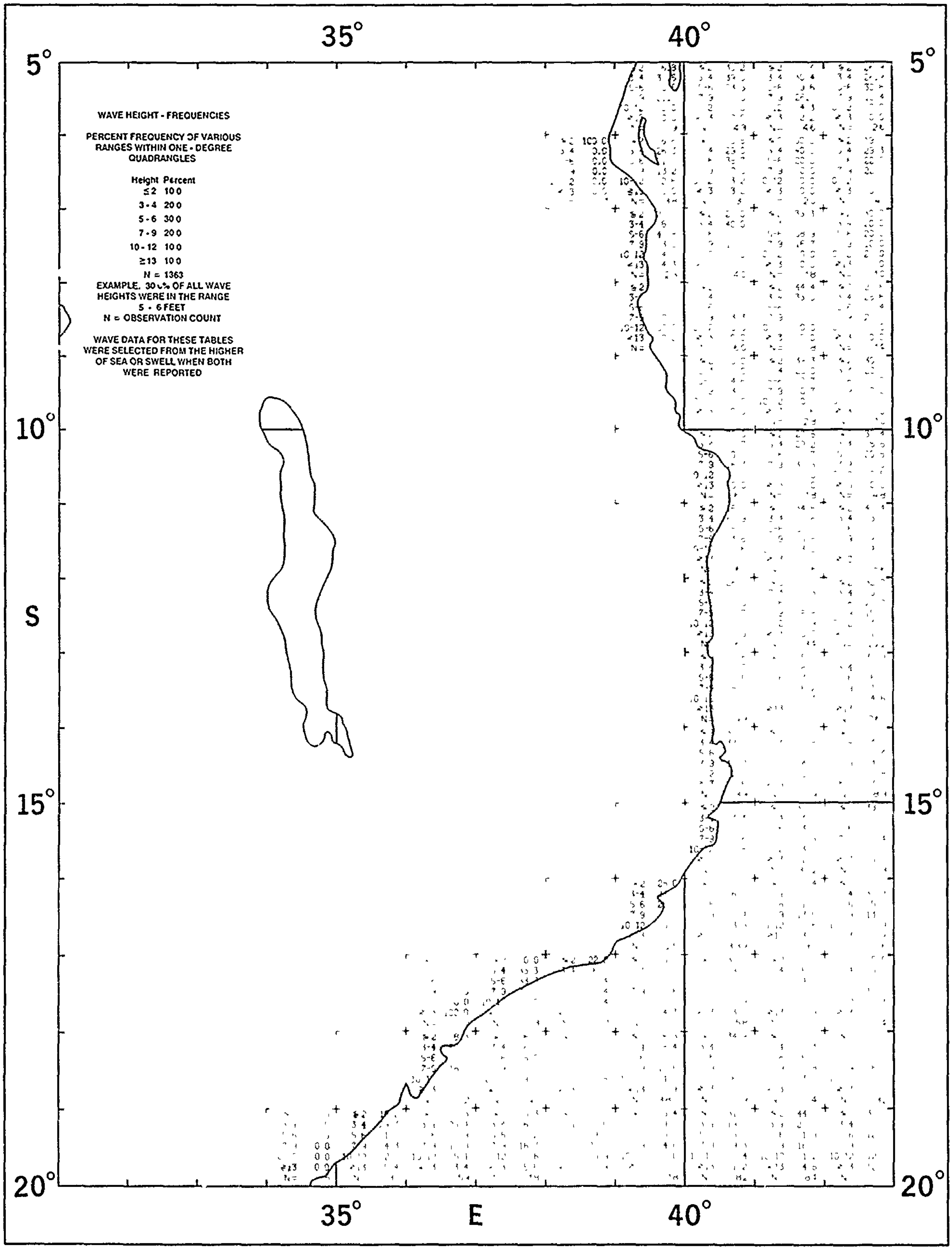

35°
40°
20°
20°
SURFACE WIND ROSE
DIRECTION FREQUENCY BARS
EACH CIRCLE = 20%
25% OF ALL WINDS
WERE FROM NORTH
MEAN SPEED (KNOTS) IS
INDICATED BY THE PRINTED
NUMBER AT THE END OF
EACH BAR*
MEAN SCALAR SPEED OF
ALL OBSERVED EAST
WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT
25°
25°
S
30°
30°
35°
35°
35°
E
40°


45°
50°
55°
20°
25°
30°
35°
S
E

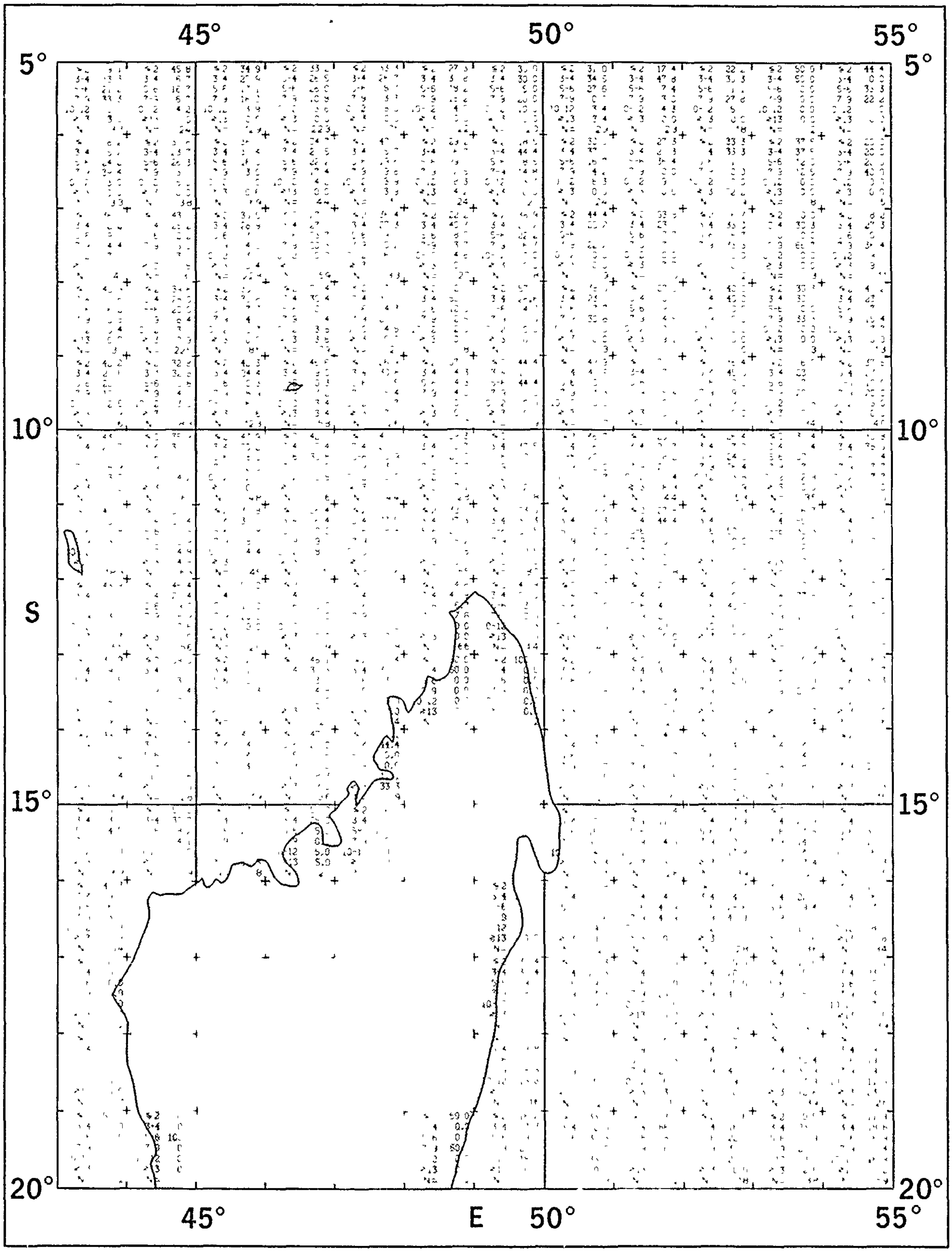

AIR AND
SEA TEMPERATURE
SOLID LINE - MEAN
AIR TEMPERATURE (° F)
DASHED LINE - MEAN SEA
SURFACE TEMPERATURE (° F)
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
81
82
83
80
79
78
77
76
75
74
73
72
71
70
69


E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
WAVE HEIGHTS
PERCENT FREQUENCY OF:
SOLID LINE - WAVE HEIGHT ≥ 3 FEET
DASHED LINE - WAVE HEIGHT ≥ 8 FEET
THE WAVE HEIGHT USED FOR THIS MAP IS THE HIGHER OF SEA OR SWELL FOR OBSERVATIONS CONTAINING BOTH WAVE TRAINS. SEA IS DEFINED AS WAVES GENERATED BY LOCAL WINDS.
≥ 3 FEET = ≥ CODE 2 (2 HALF METERS)
≥ 8 FEET = ≥ CODE 5 (5 HALF METERS)
70
70
60
70
50
80
70
60
80
90
90

January — Wave Height

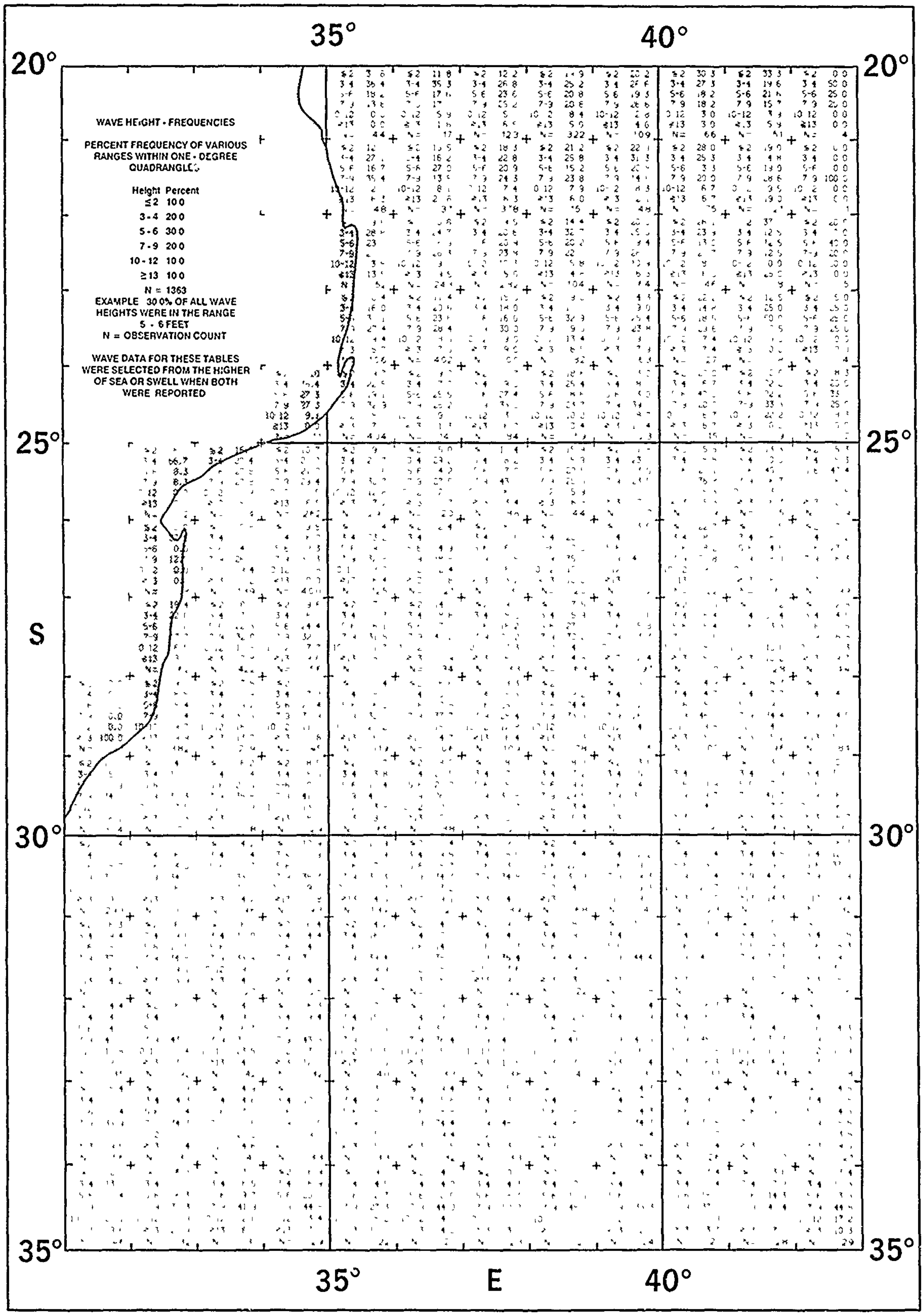


January Wave Height



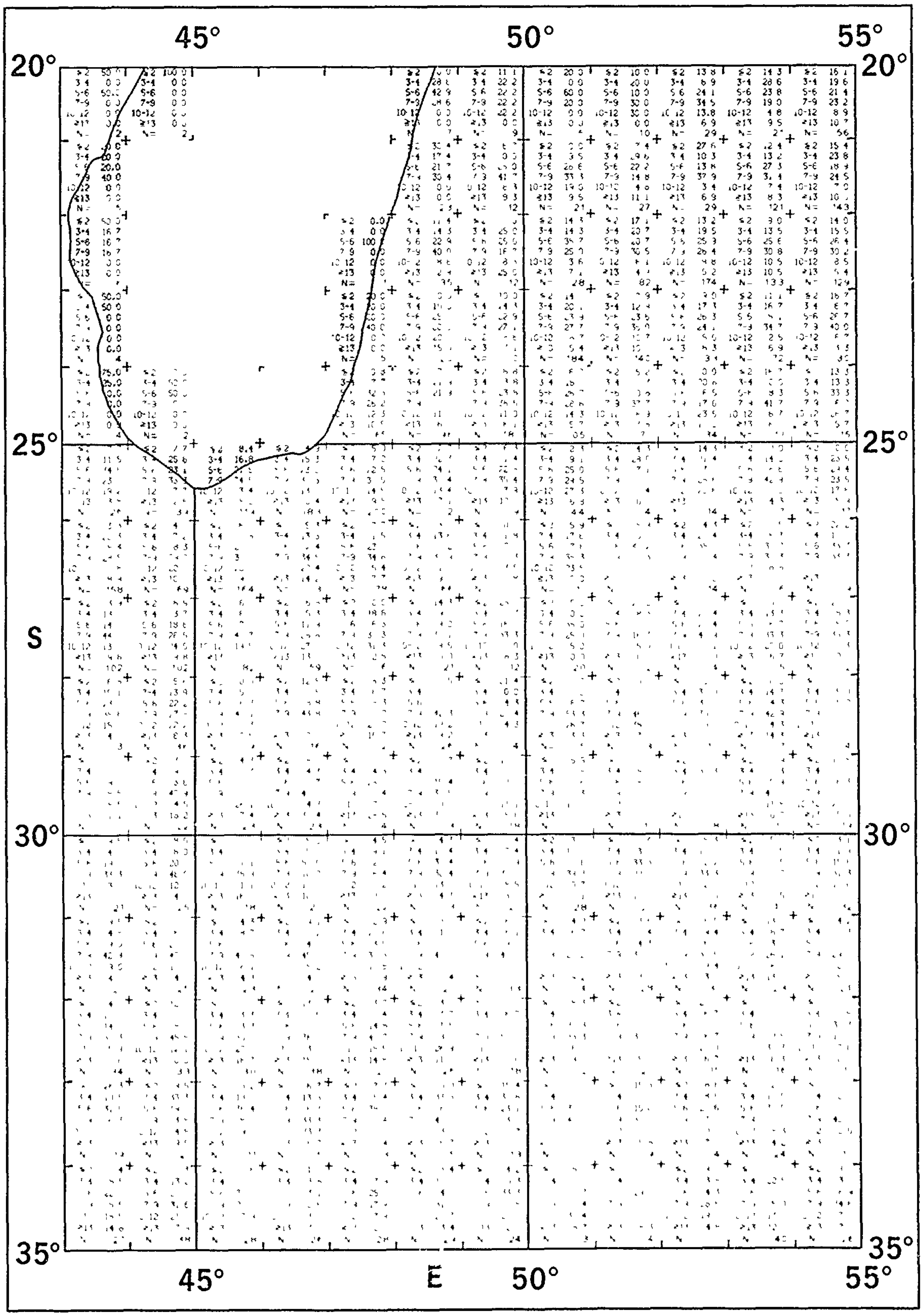
January

Wave Height

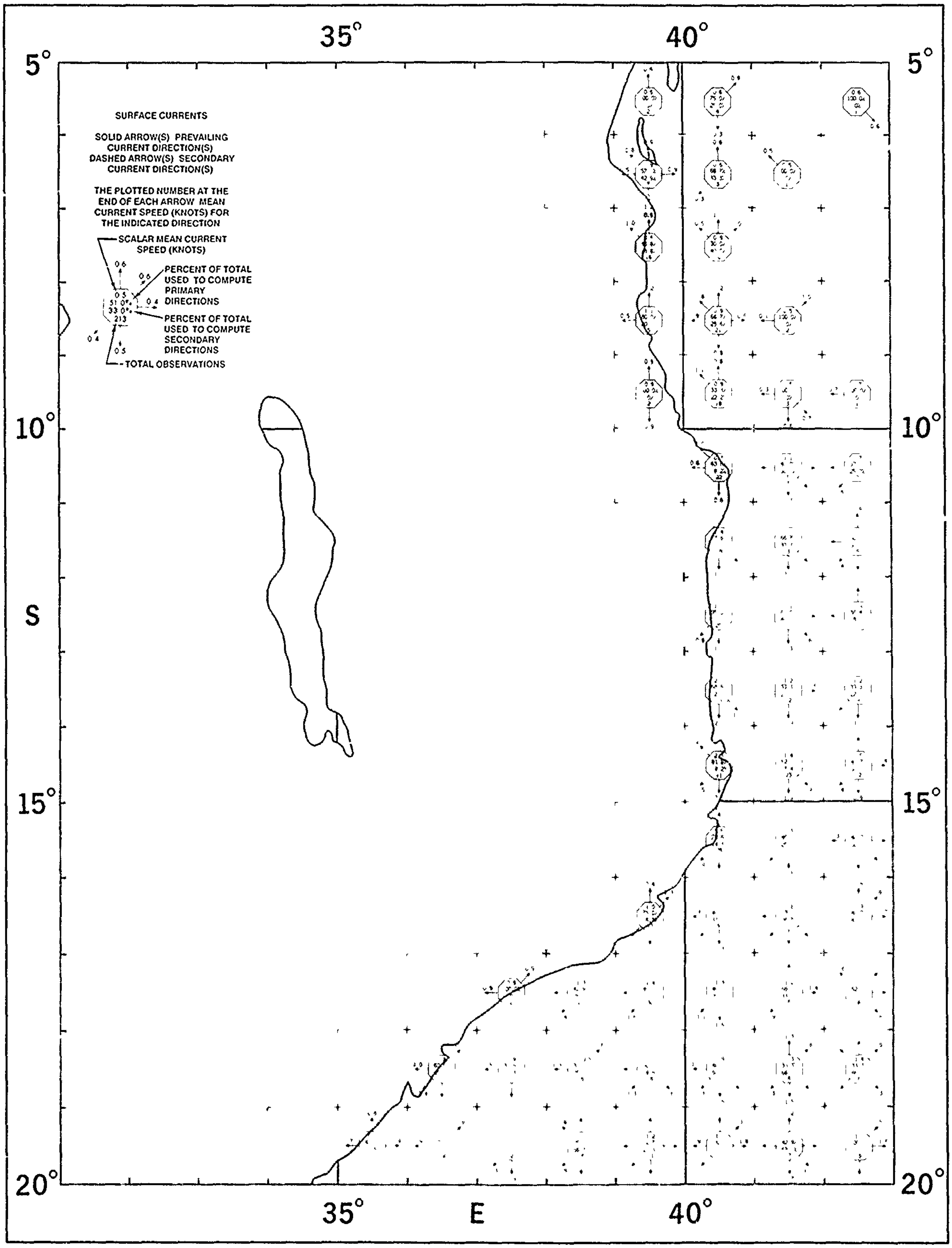


January

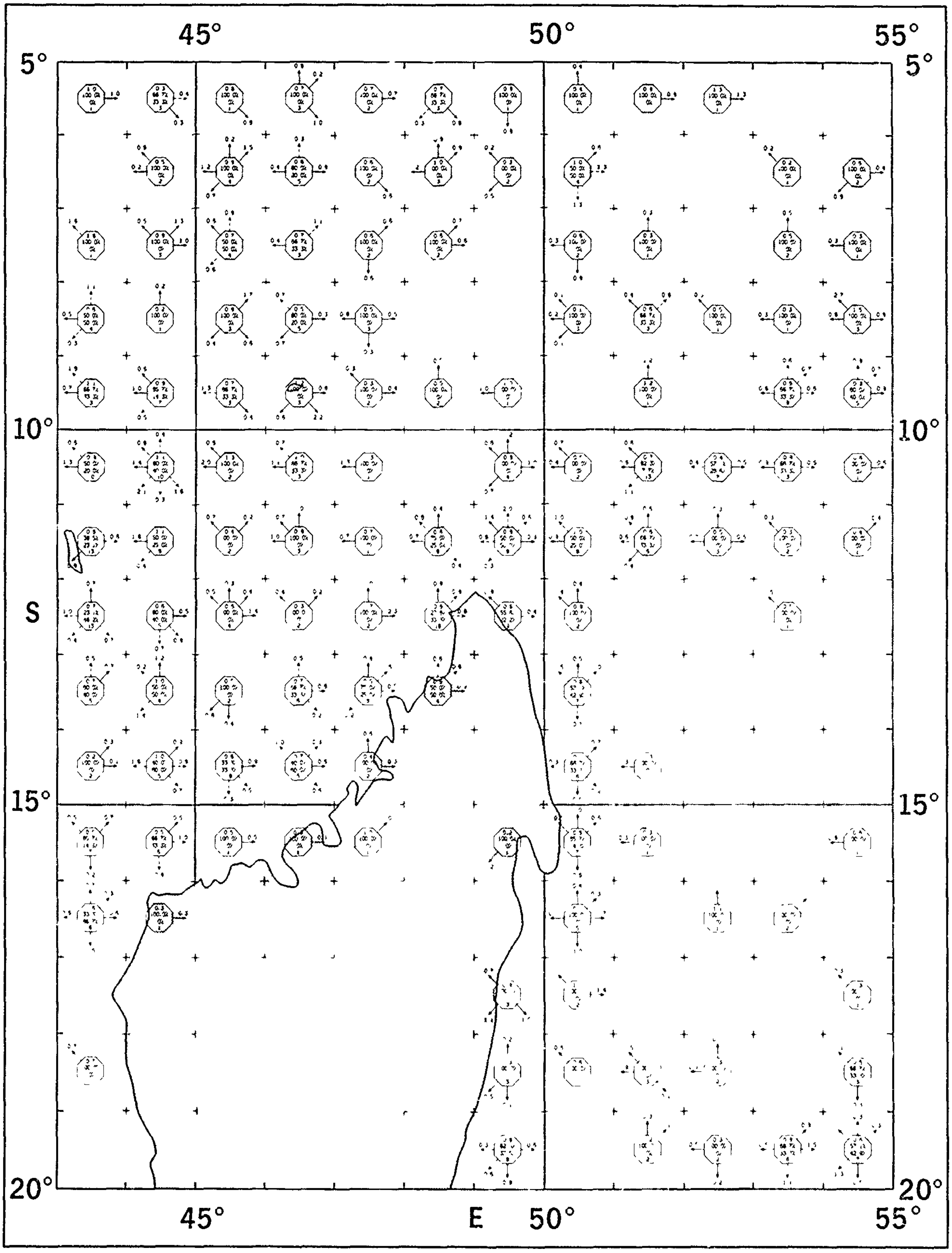
Wave Height

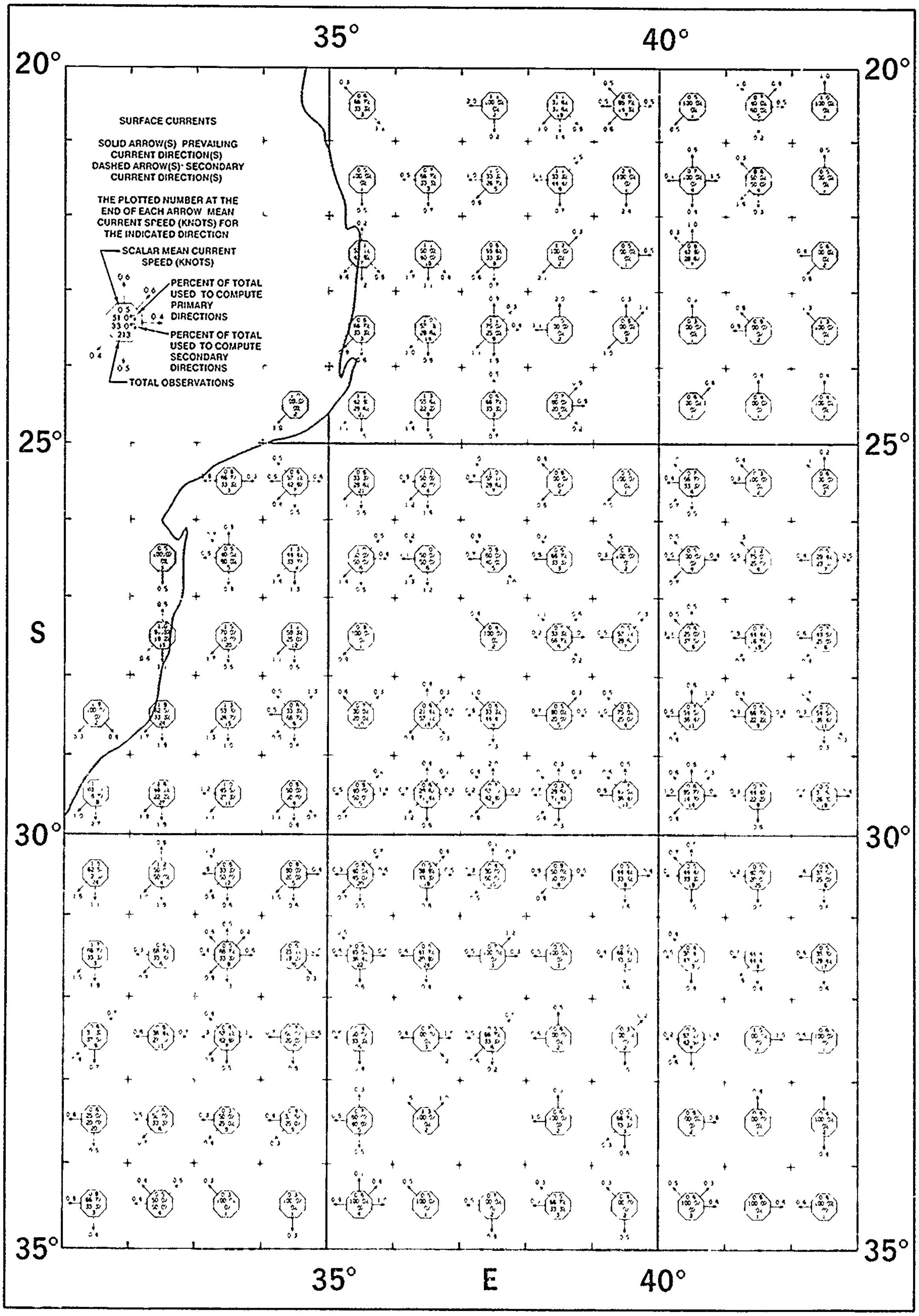


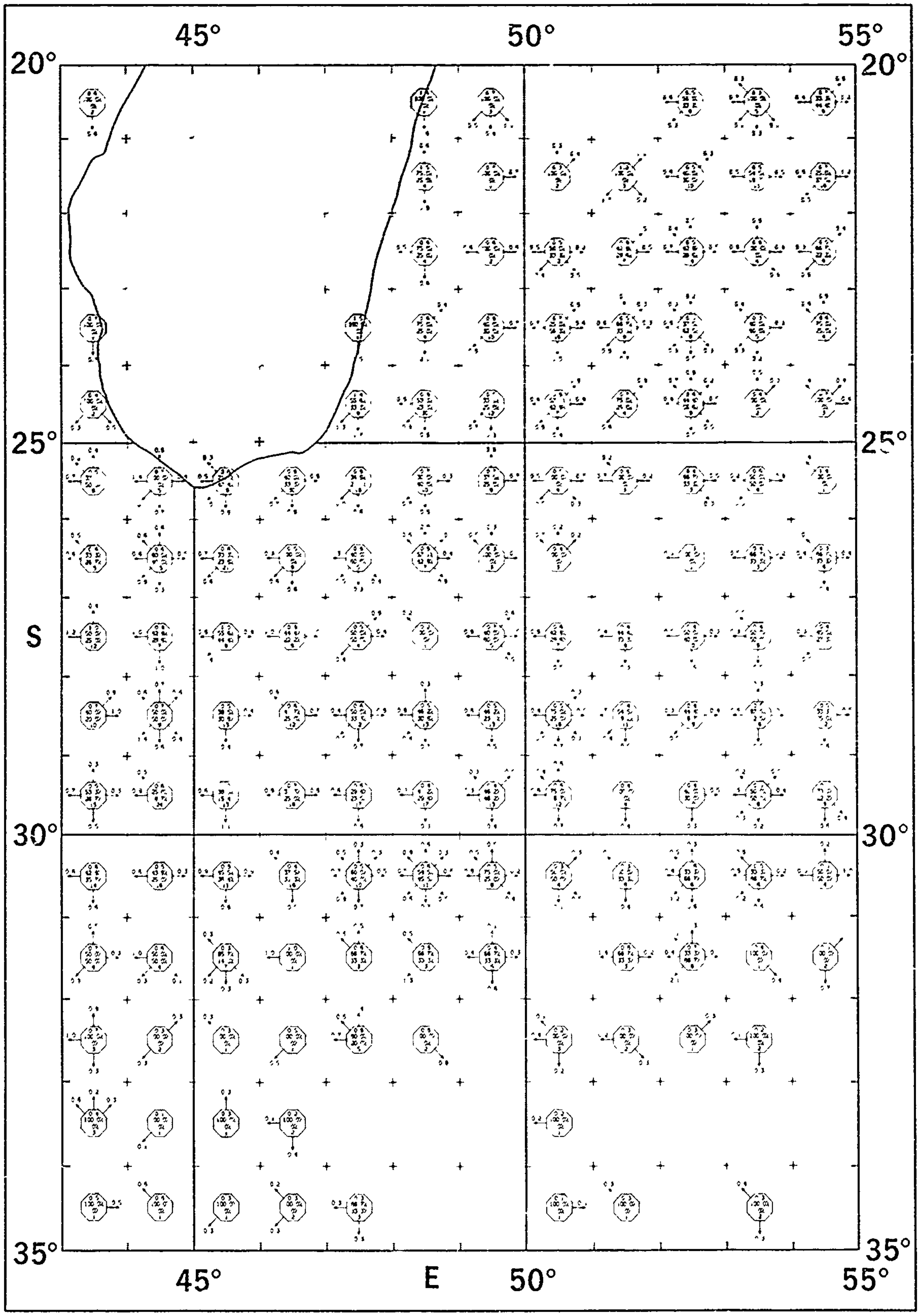
January Surface Currents

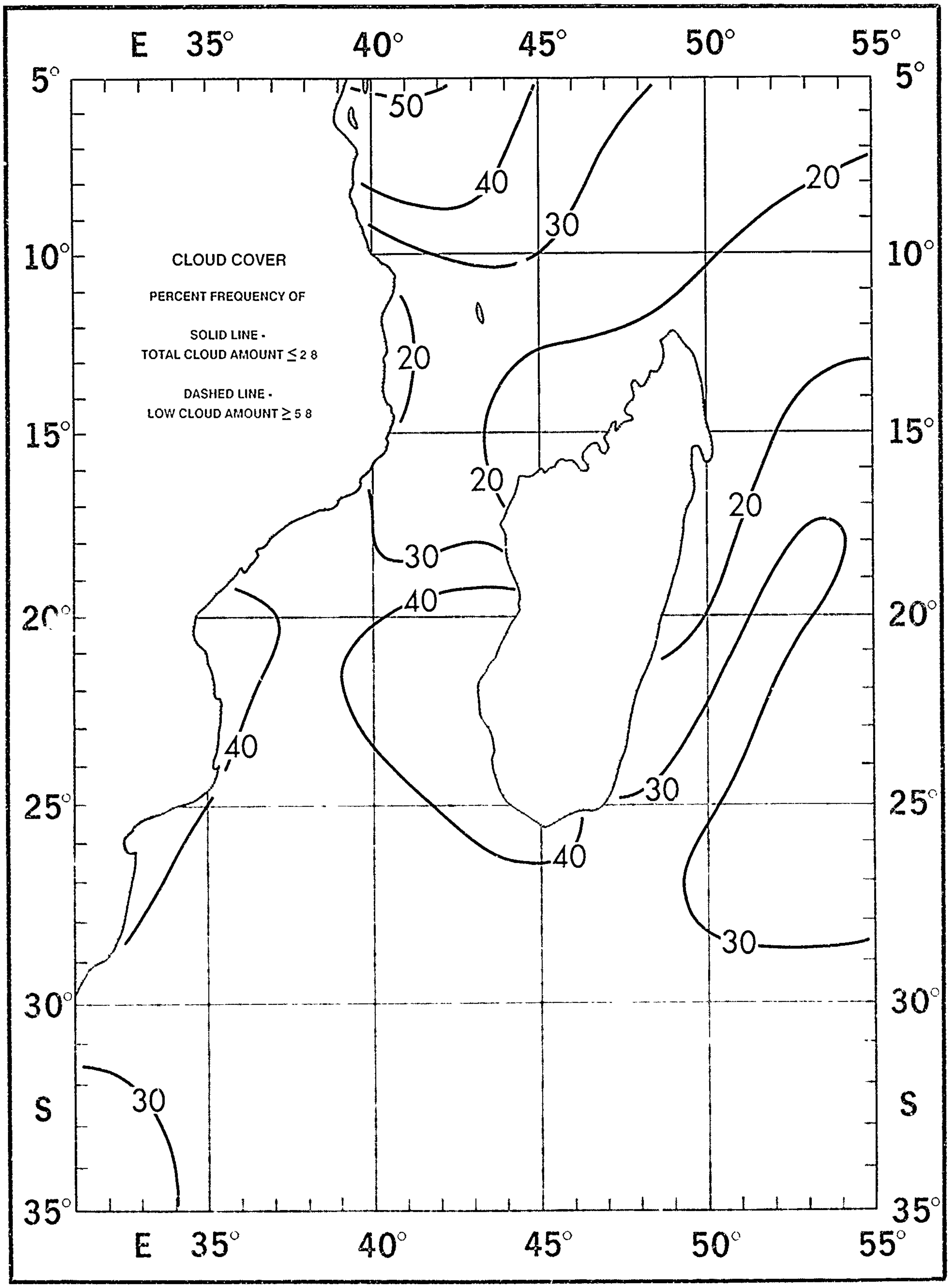


January — Surface Currents

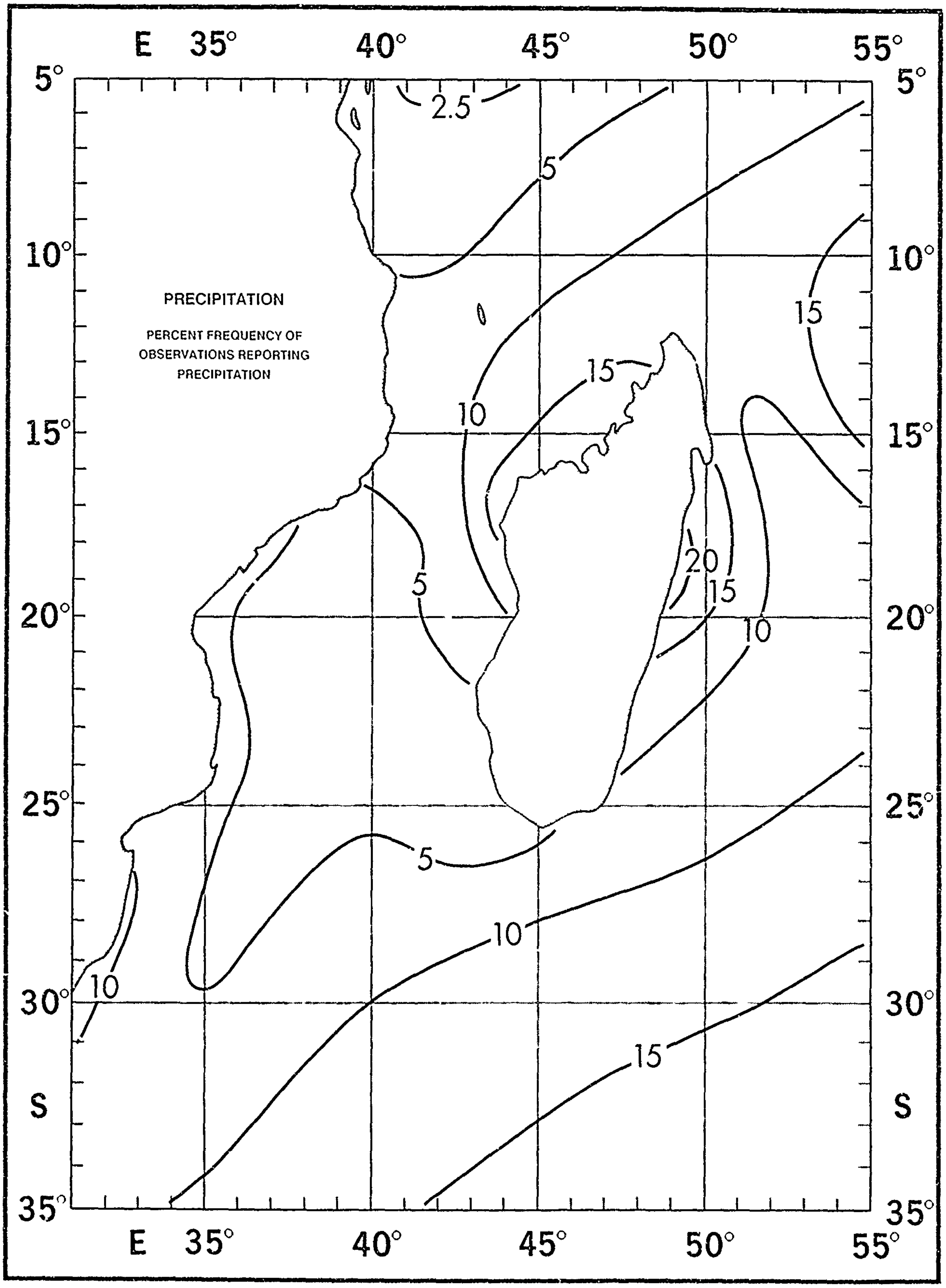



SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S)· SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS
35°
40°
20°
25°
30°
35°
S
E

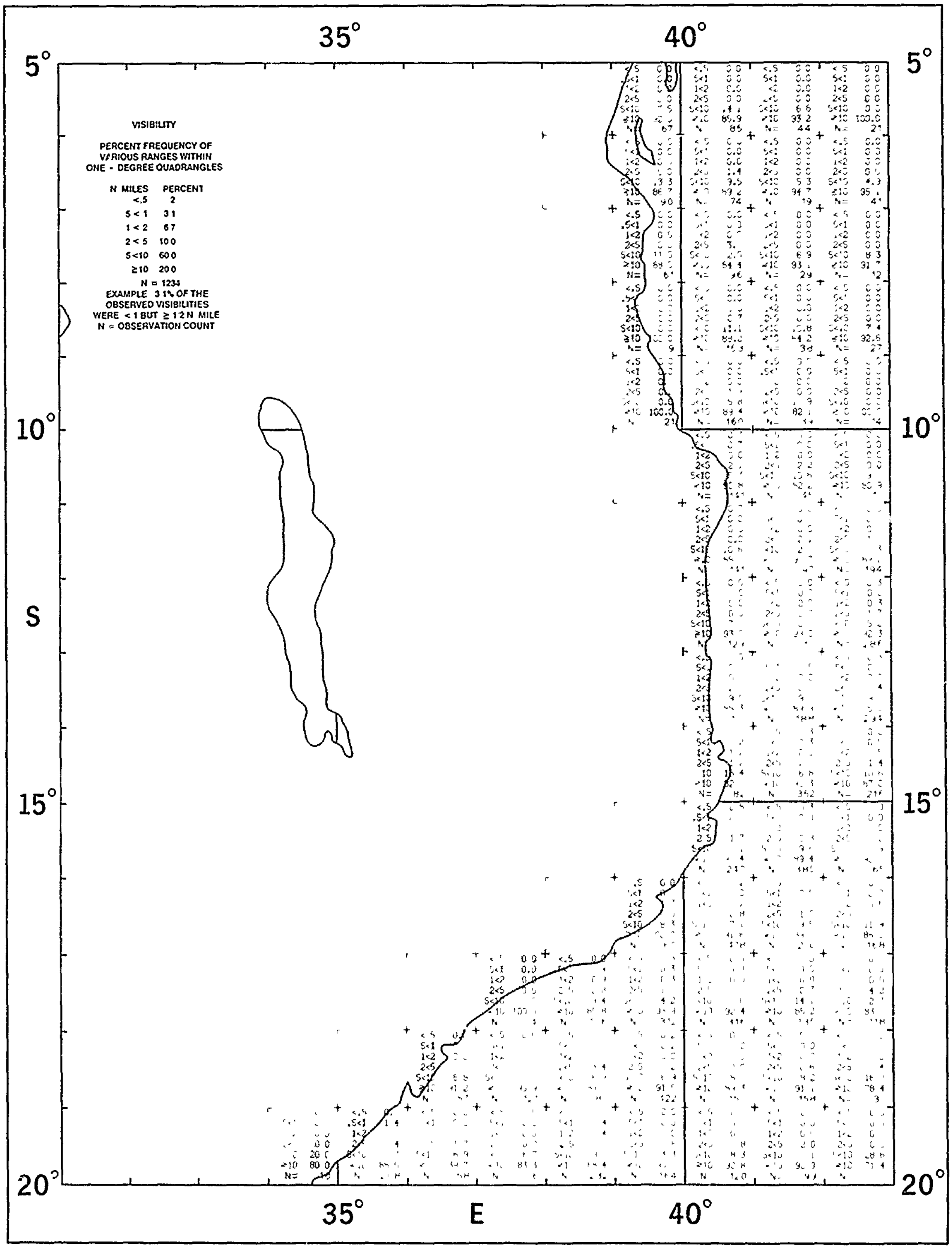

45°
50°
55°
20°
25°
30°
35°
S
E


E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° 35°
S
CLOUD COVER
PERCENT FREQUENCY OF
SOLID LINE -
TOTAL CLOUD AMOUNT ≤ 2 8
DASHED LINE -
LOW CLOUD AMOUNT ≥ 5 8
50
40
30
20
40
30
40
30
20
20
30
40
30

February Precipitation

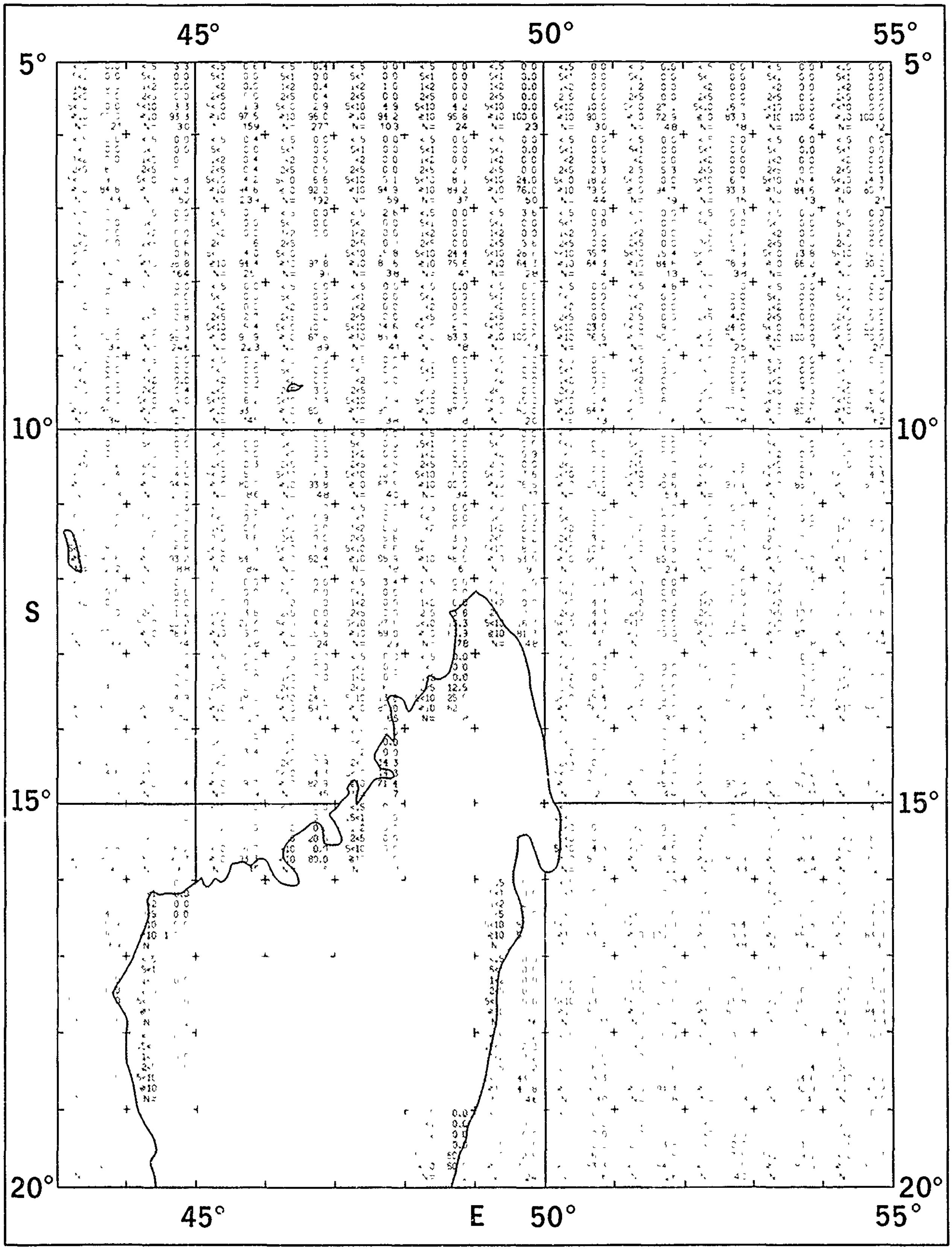


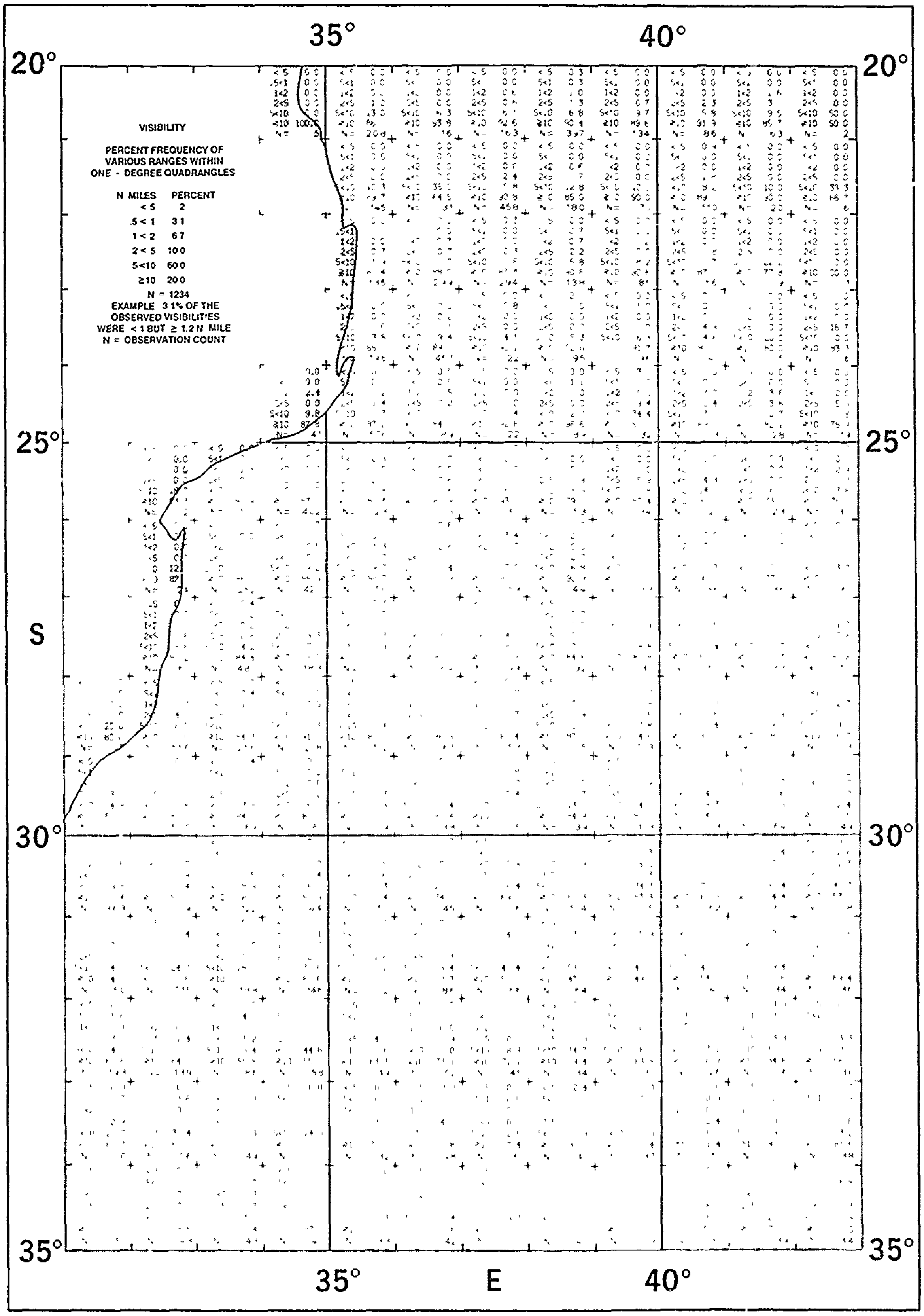
February **Visibility**



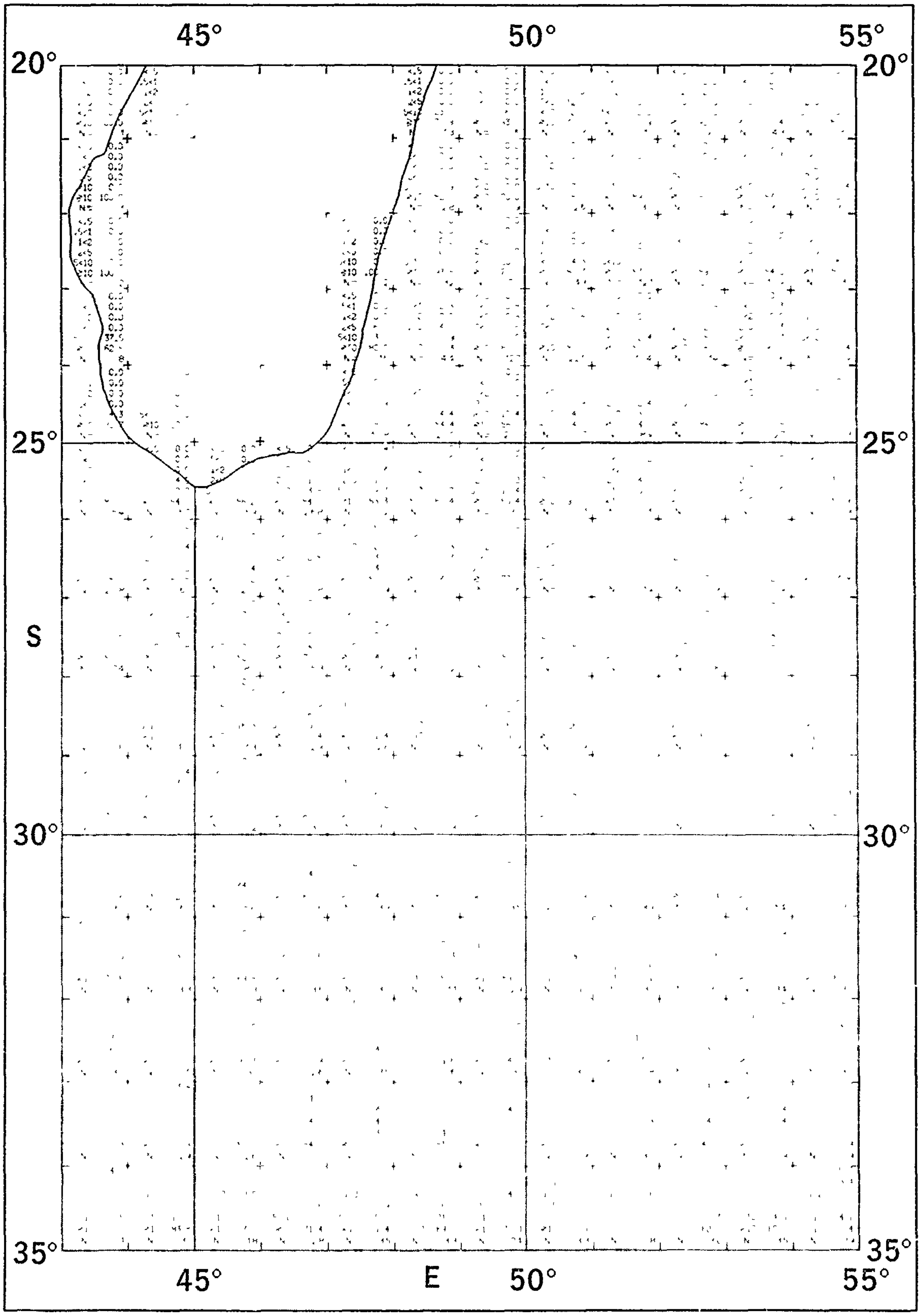
February

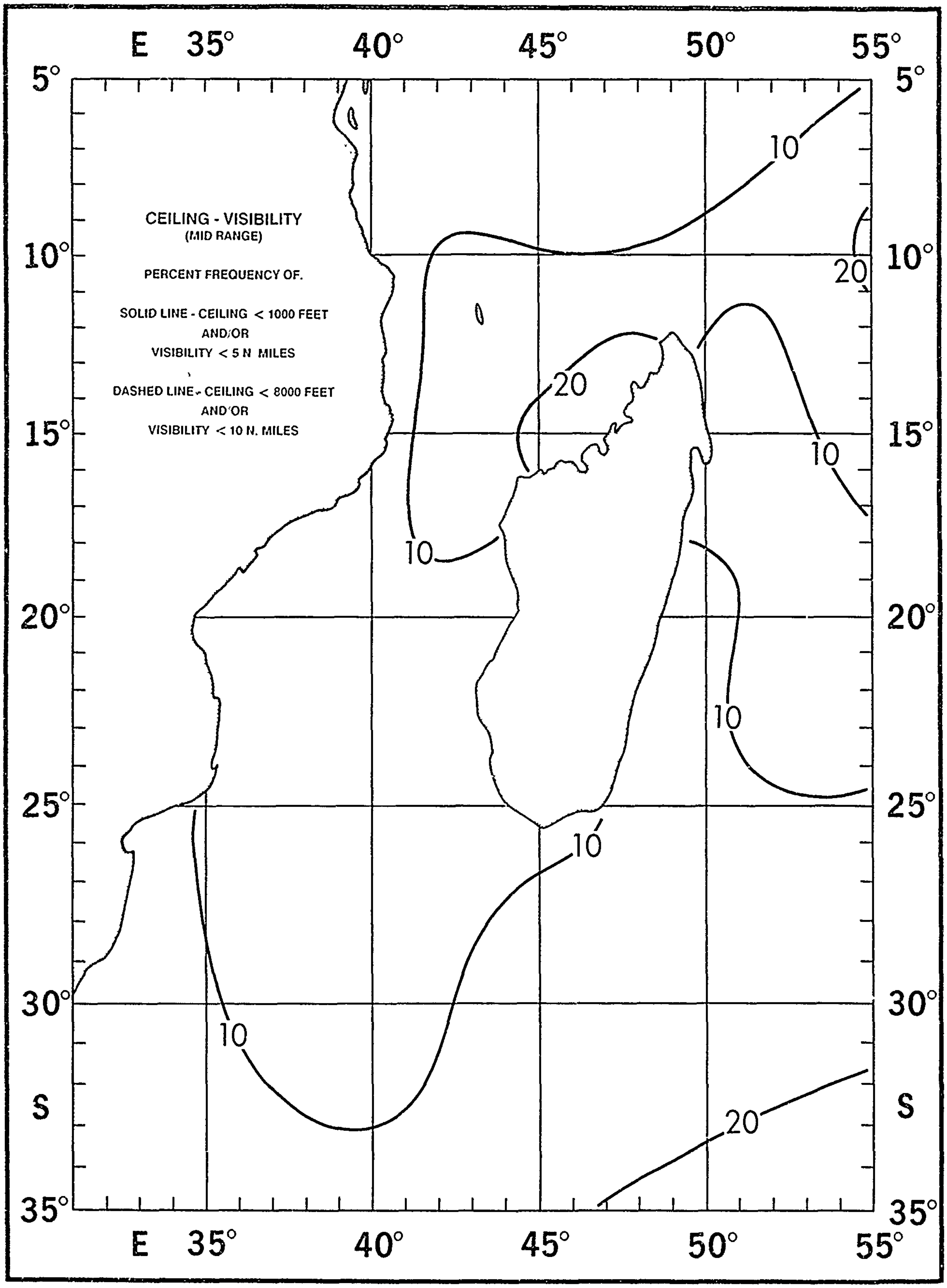
Visibility




35°
40°
20°
25°
30°
35°
S
E
VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
< 5 2
.5 < 1 3 1
1 < 2 6 7
2 < 5 10 0
5 < 10 60 0
≥10 20 0
N = 1234
EXAMPLE 3 1% OF THE OBSERVED VISIBILITIES WERE < 1 BUT ≥ 1.2 N MILE
N = OBSERVATION COUNT

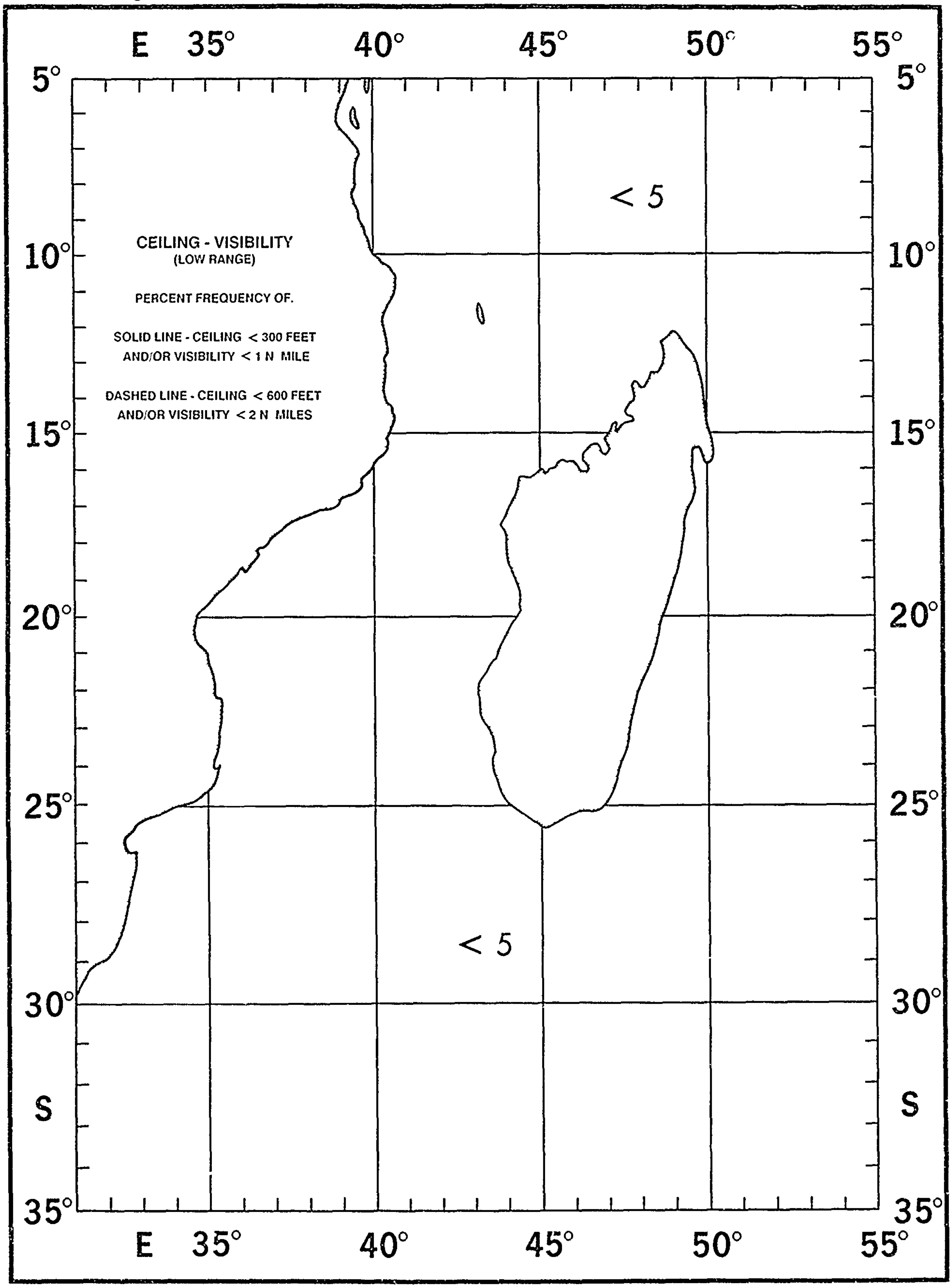
February Visibility




E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
CEILING - VISIBILITY
(MID RANGE)
PERCENT FREQUENCY OF.
SOLID LINE - CEILING < 1000 FEET
AND/OR
VISIBILITY < 5 N MILES
DASHED LINE - CEILING < 8000 FEET
AND/OR
VISIBILITY < 10 N. MILES
10
20
10
20
10
10
10
10
10
20

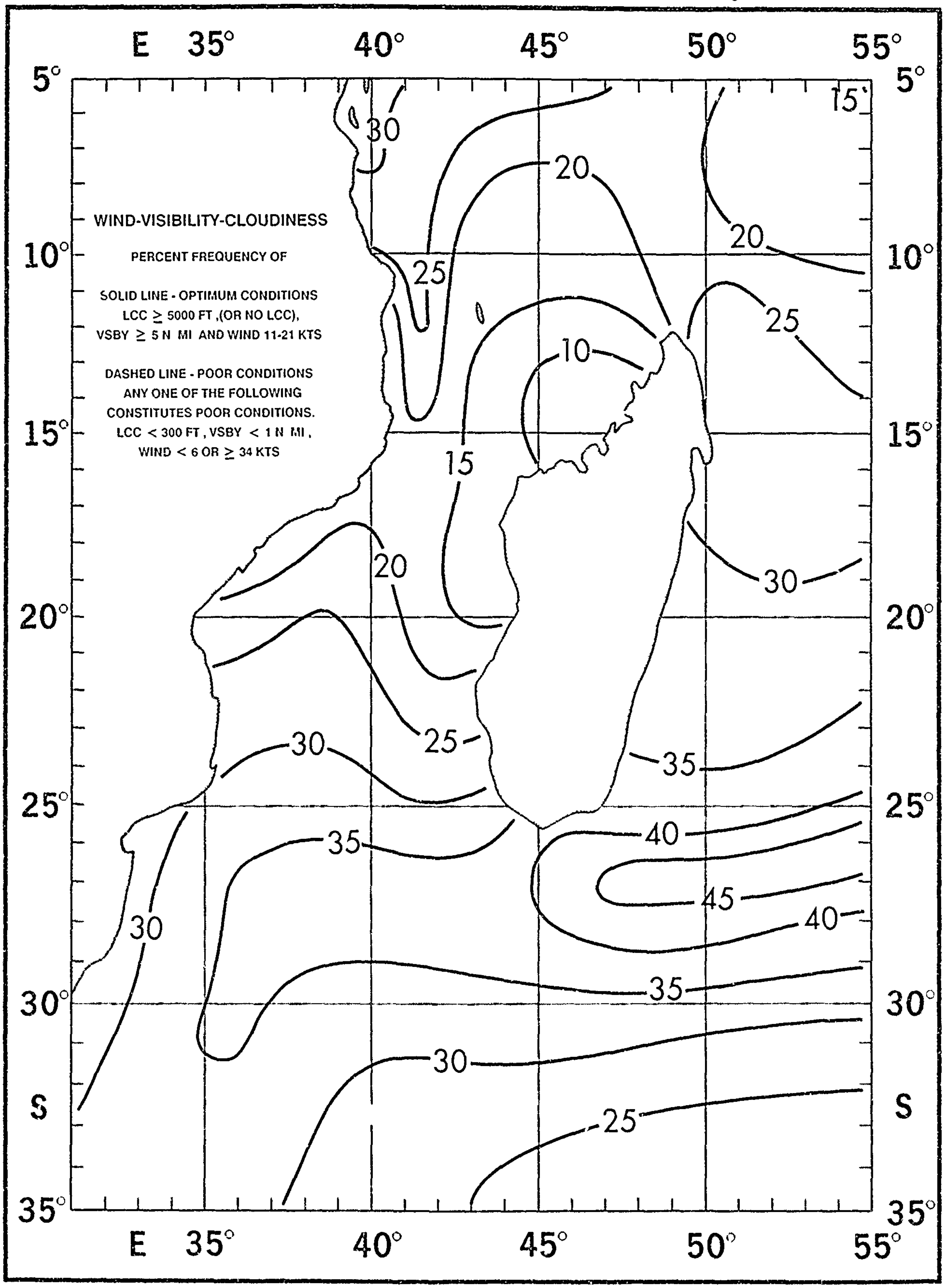
February

Ceiling - Visibility (Low Range)



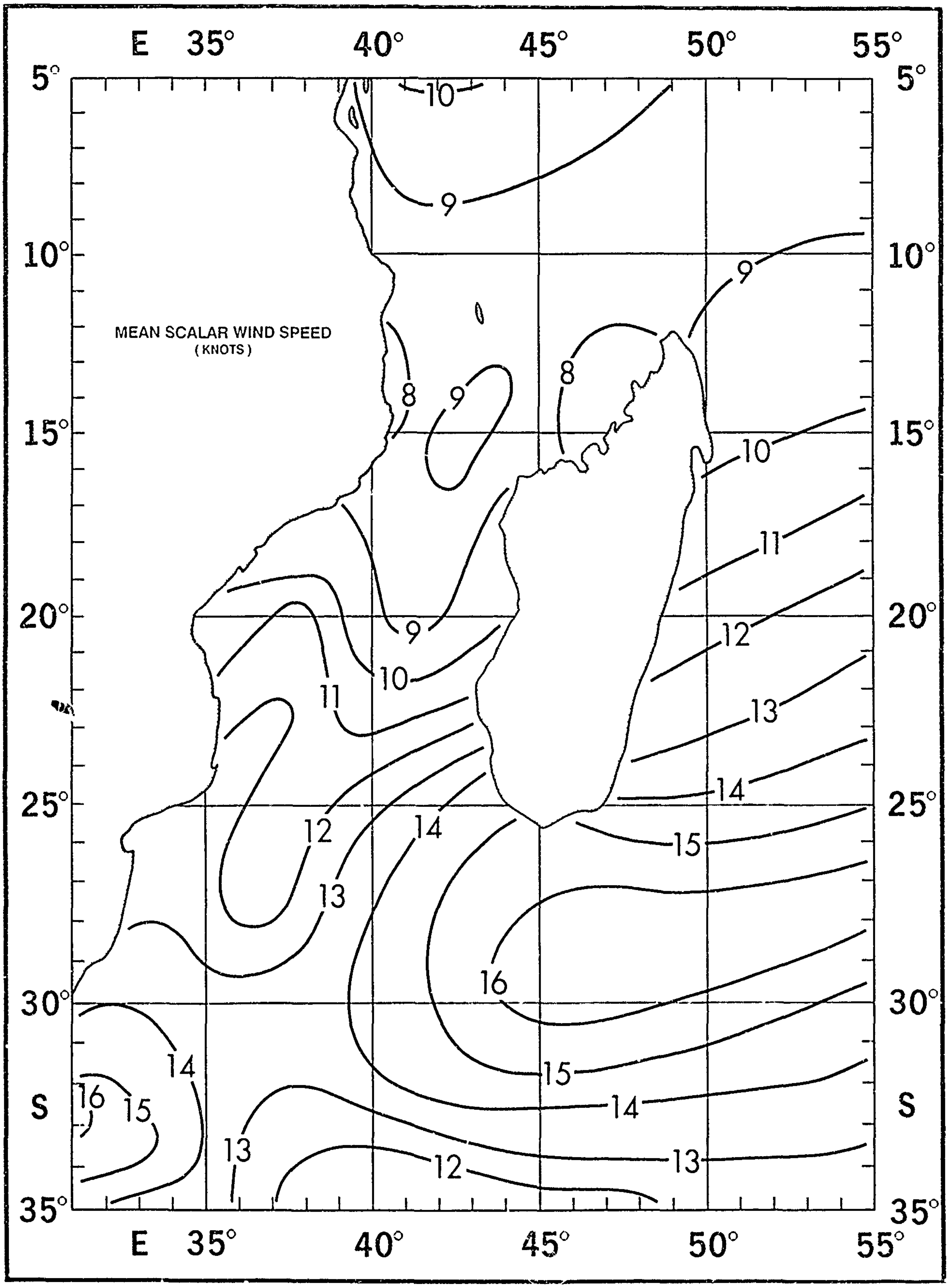
February

Wind - Visibility - Cloudiness



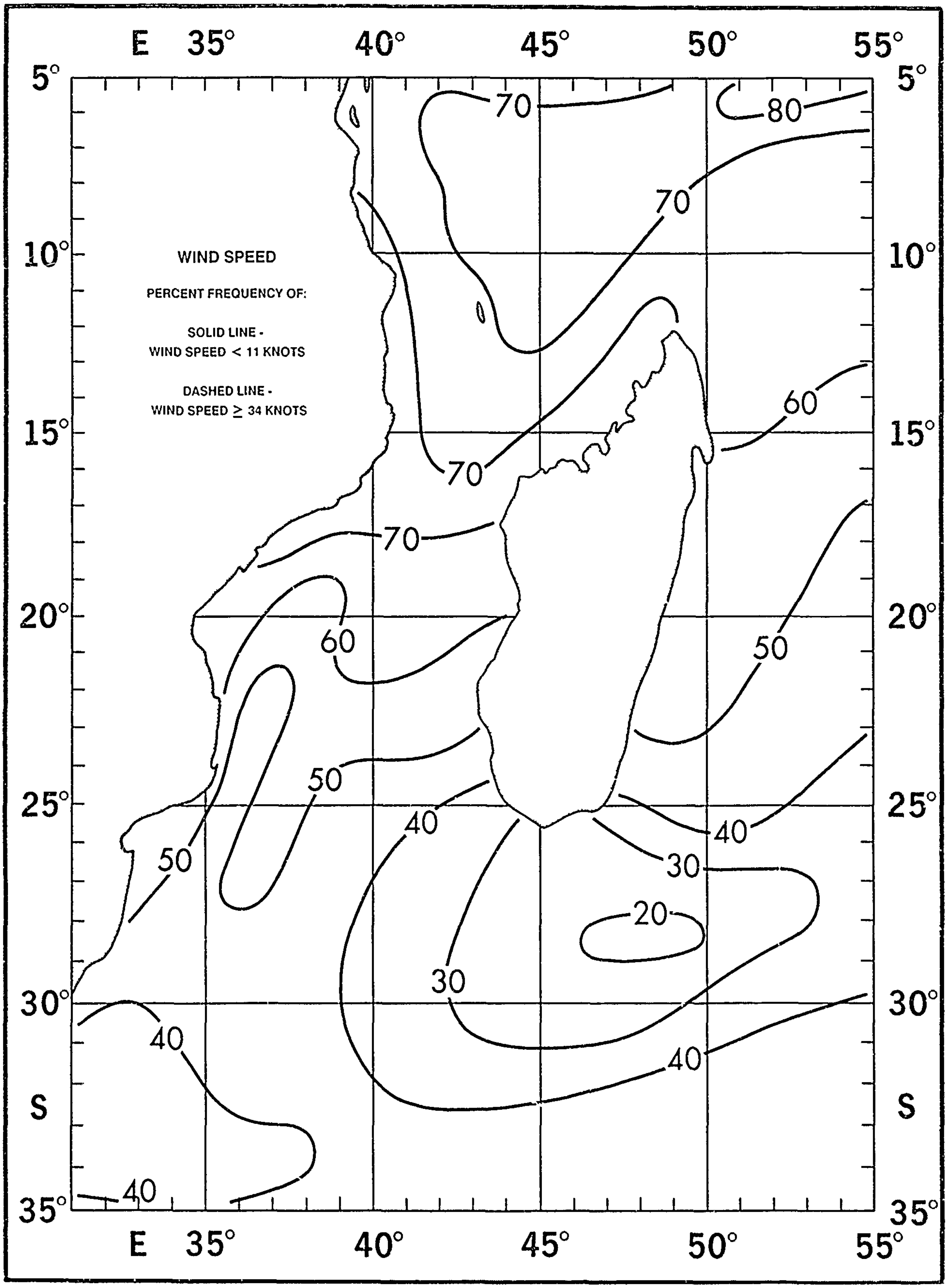
February

Mean Scalar Wind Speed

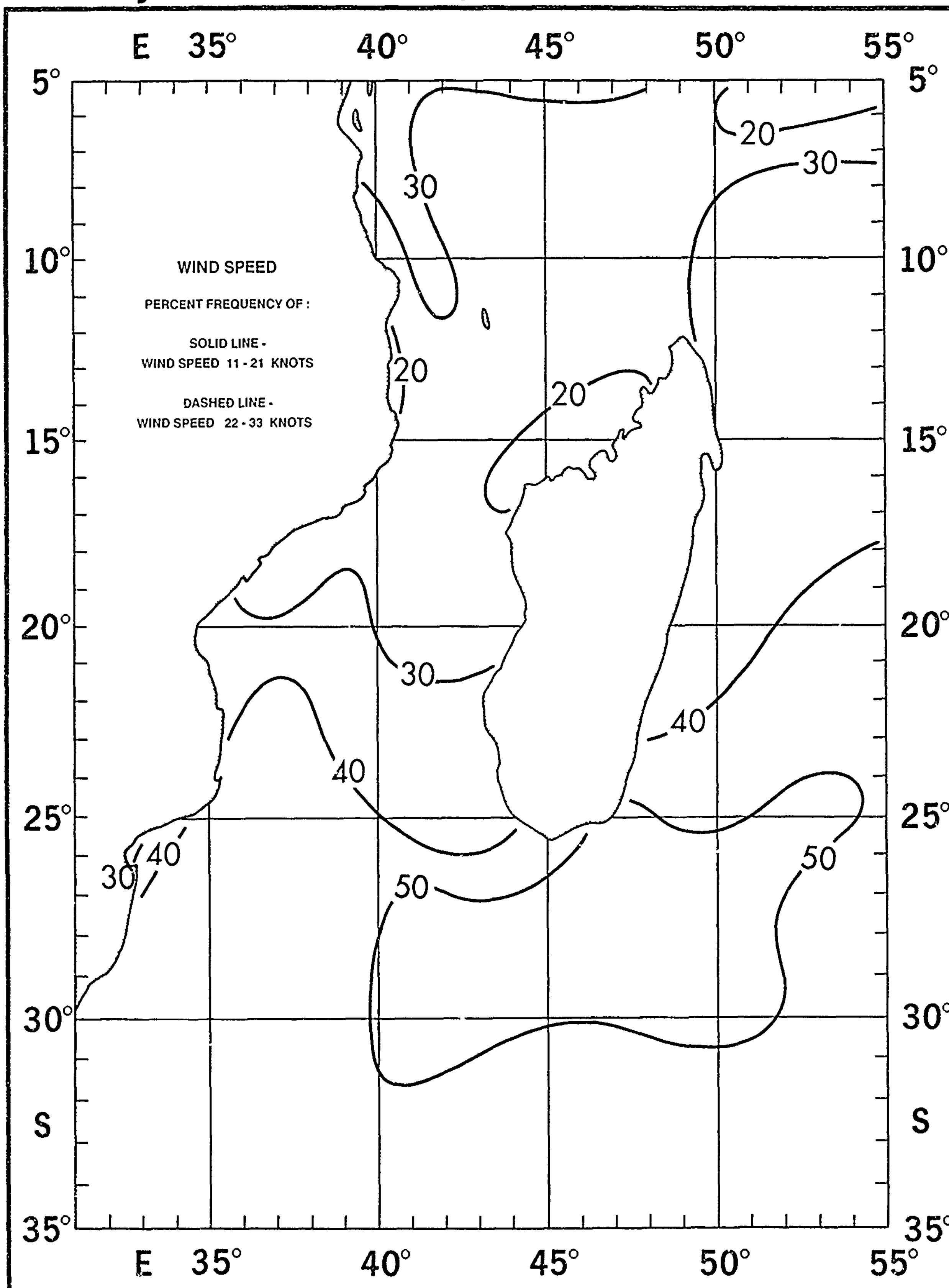


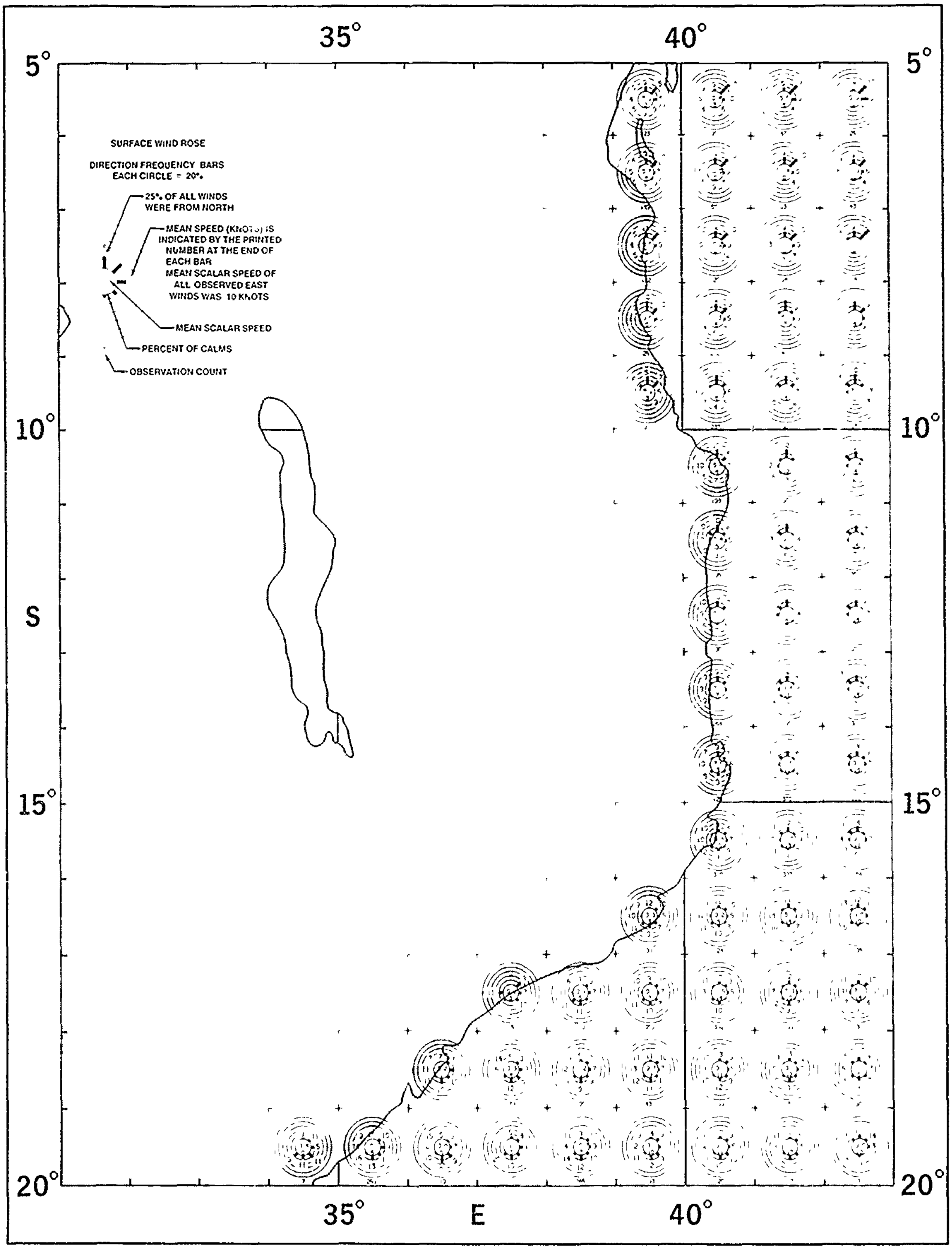
February

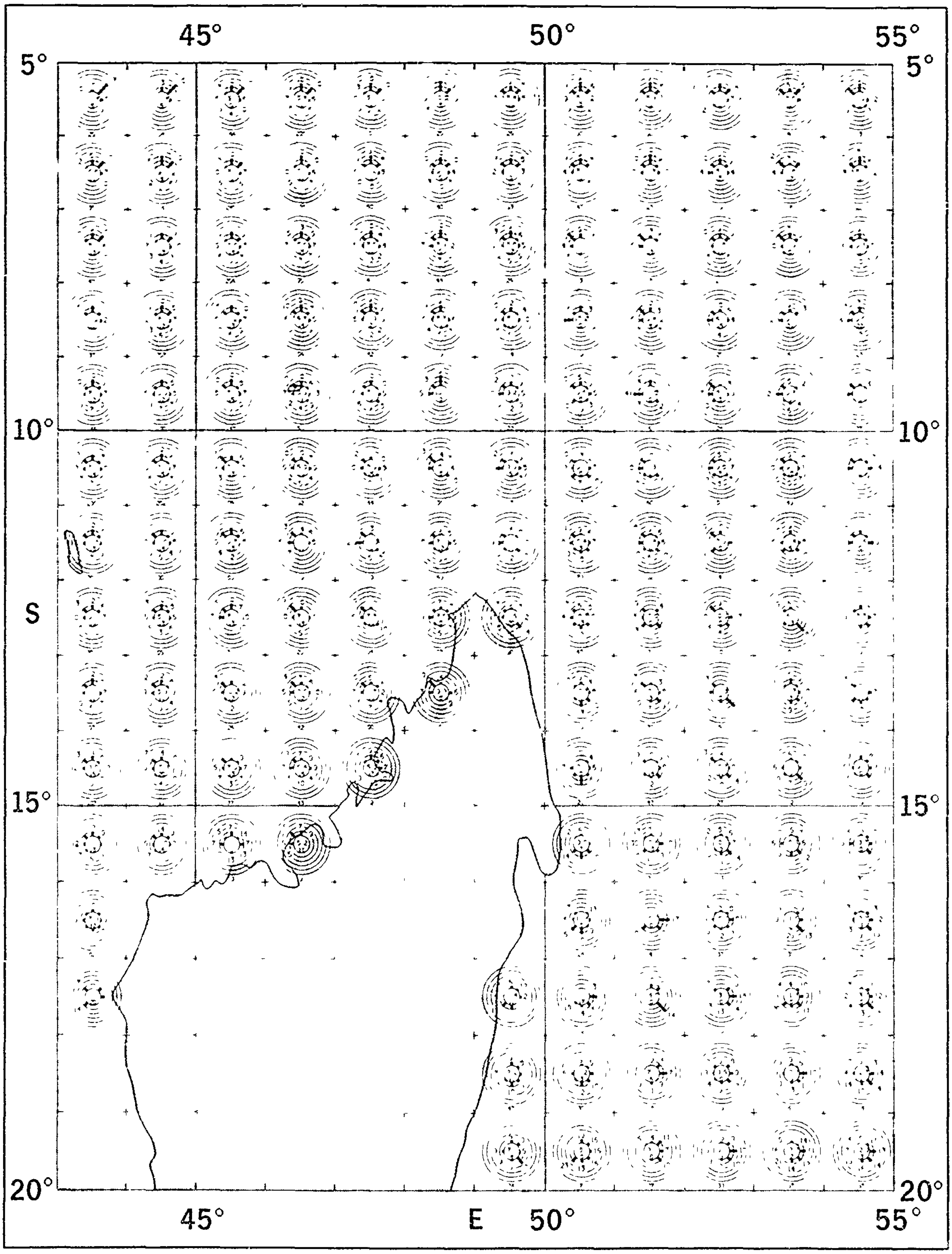
Wind Speed <11 and ≥34 Knots



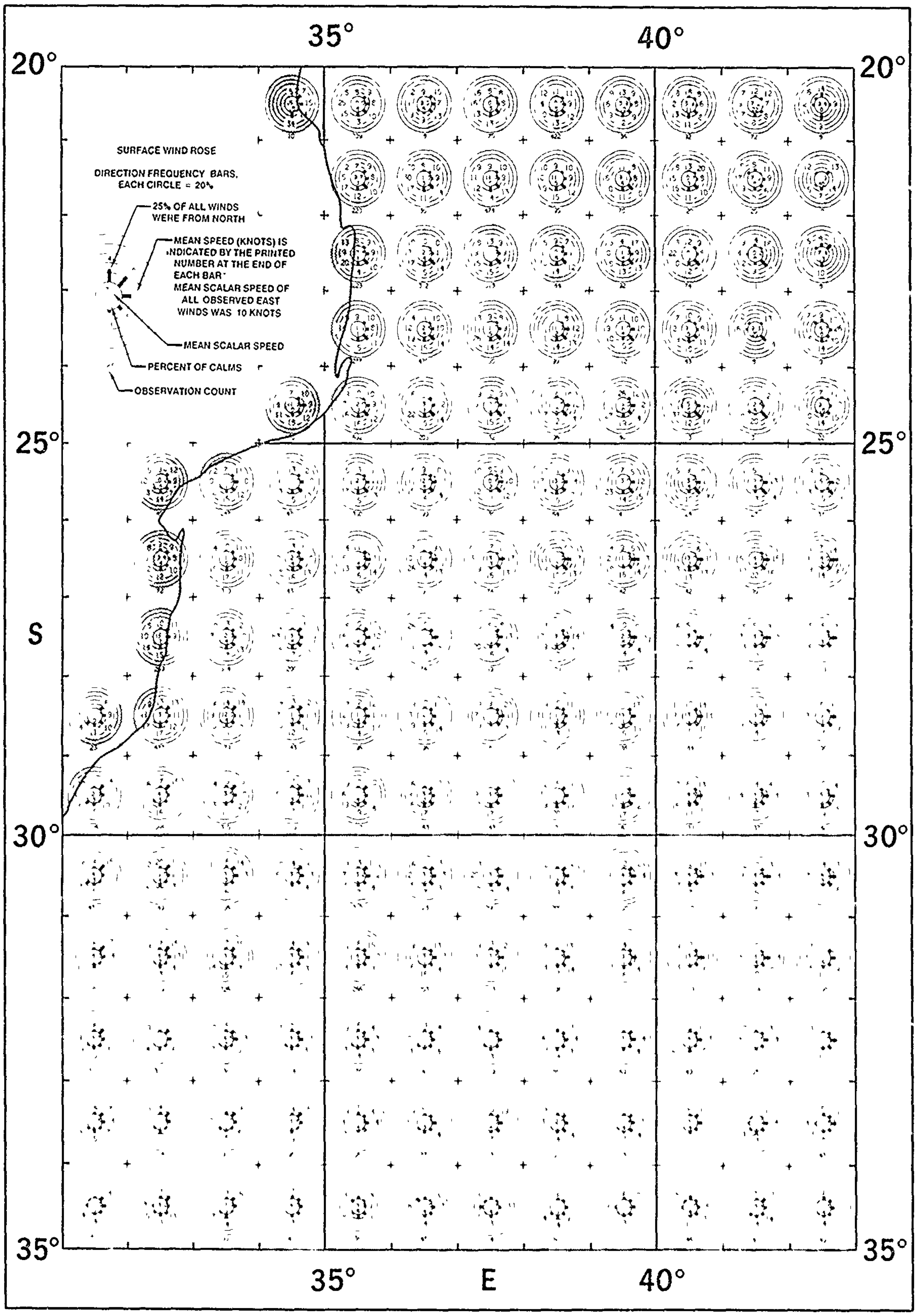
February Wind Speed 11 - 21 and 22 - 33 Knots

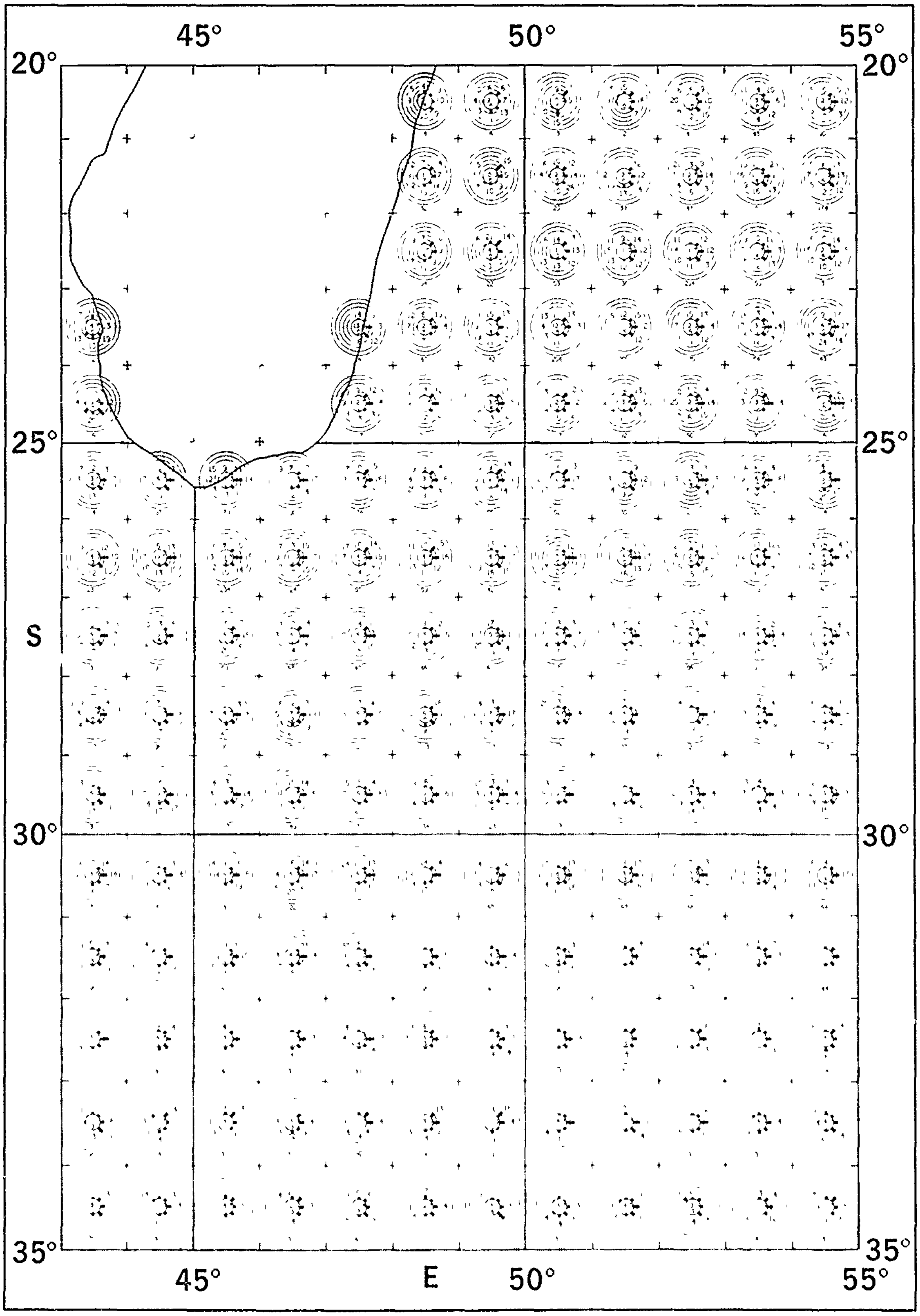


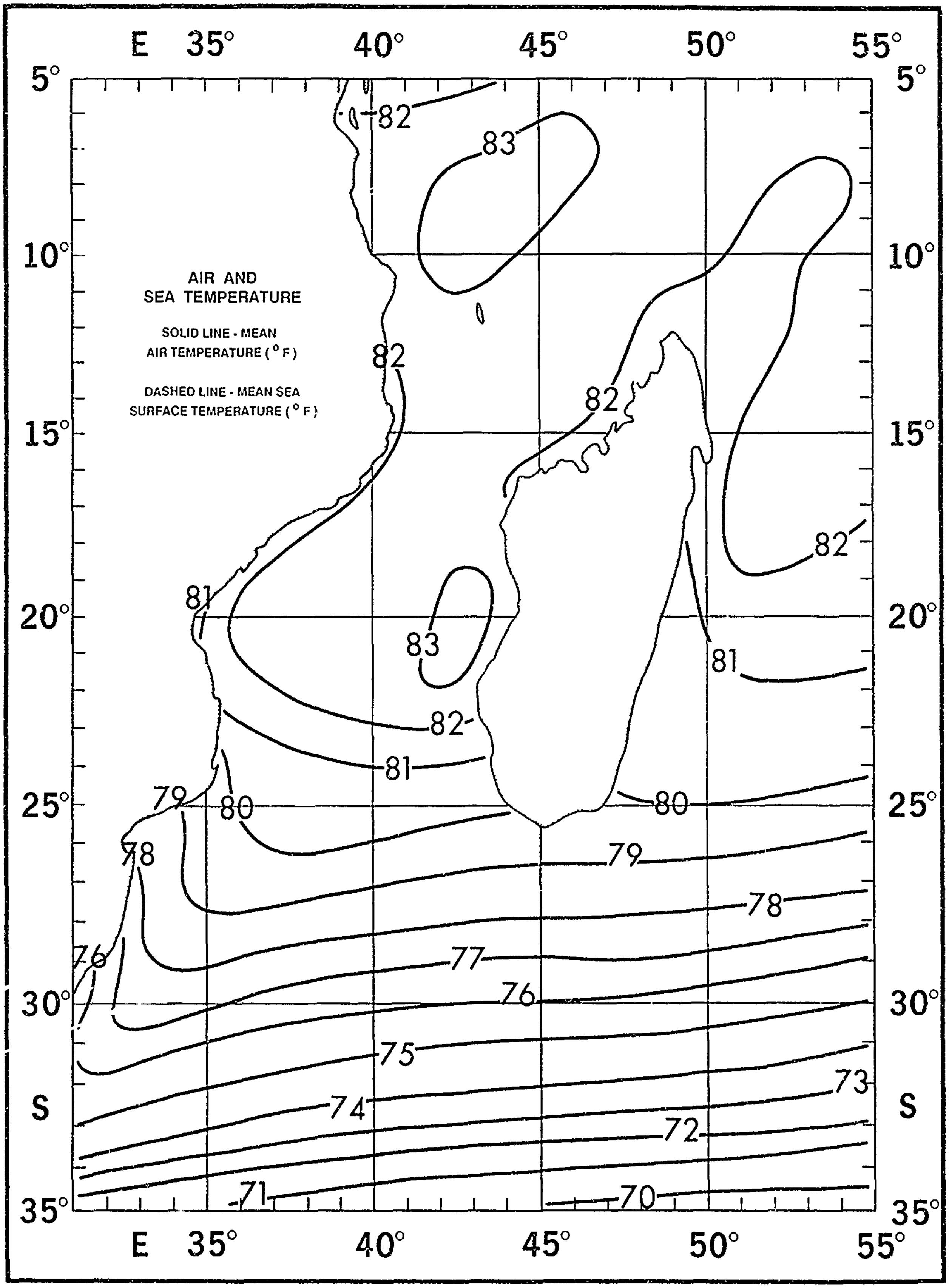

35°
40°
5°
5°
SURFACE WIND ROSE
DIRECTION FREQUENCY BARS
EACH CIRCLE = 20%
25% OF ALL WINDS
WERE FROM NORTH
MEAN SPEED (KNOTS) IS
INDICATED BY THE PRINTED
NUMBER AT THE END OF
EACH BAR
MEAN SCALAR SPEED OF
ALL OBSERVED EAST
WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT
10°
10°
S
15°
15°
20°
20°
35°
E
40°


45°
50°
55°
5°
5°
10°
10°
S
15°
15°
20°
20°
45°
E
50°
55°

February Surface Wind Roses

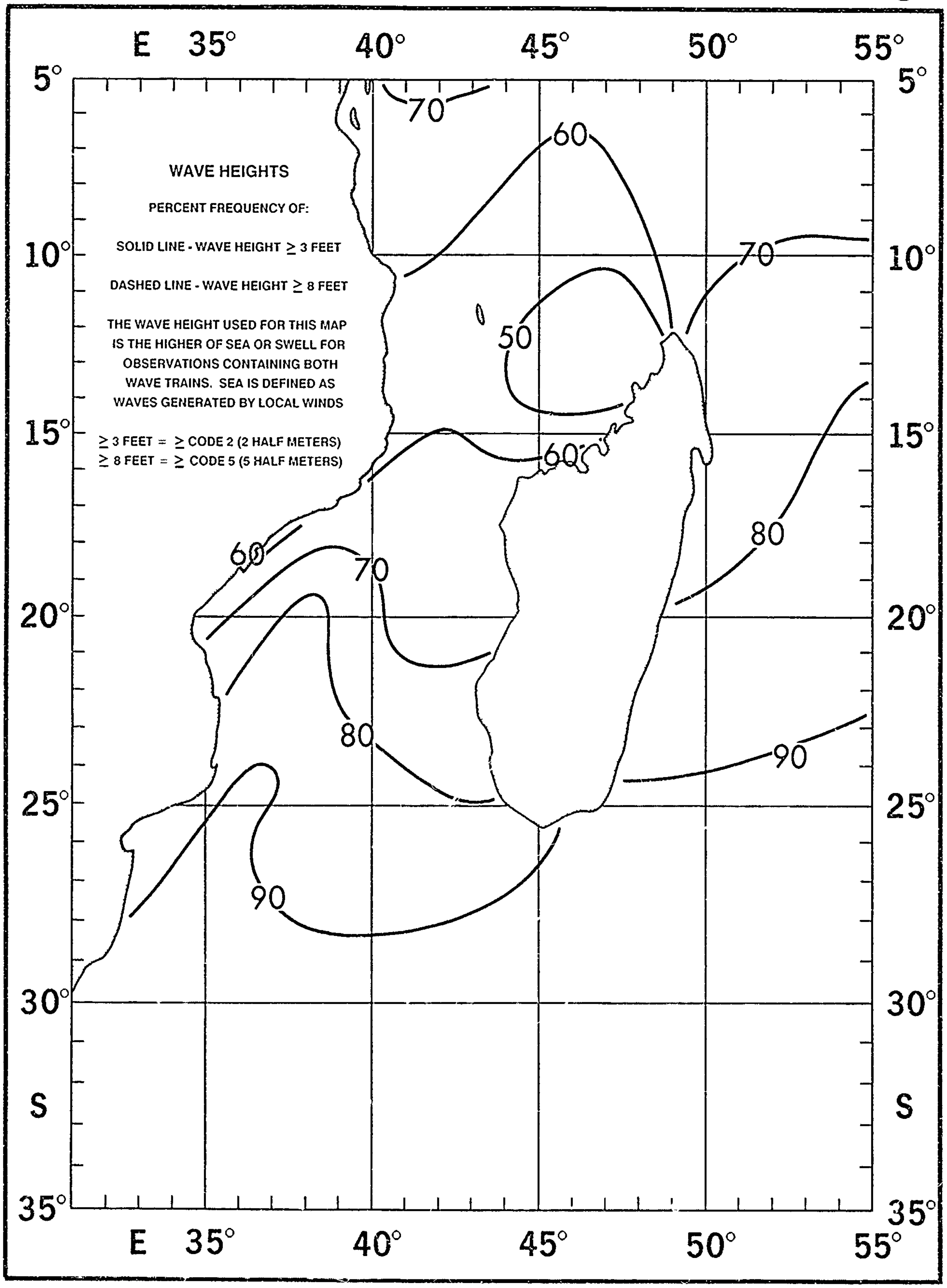



45°
50°
55°
20°
20°
25°
25°
S
30°
30°
35°
35°
45°
E
50°
55°


E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
AIR AND
SEA TEMPERATURE
SOLID LINE - MEAN
AIR TEMPERATURE (° F)
DASHED LINE - MEAN SEA
SURFACE TEMPERATURE (° F)
82
83
82
82
82
81
83
82
81
81
79
80
80
78
79
78
76
77
76
75
73
74
72
71
70

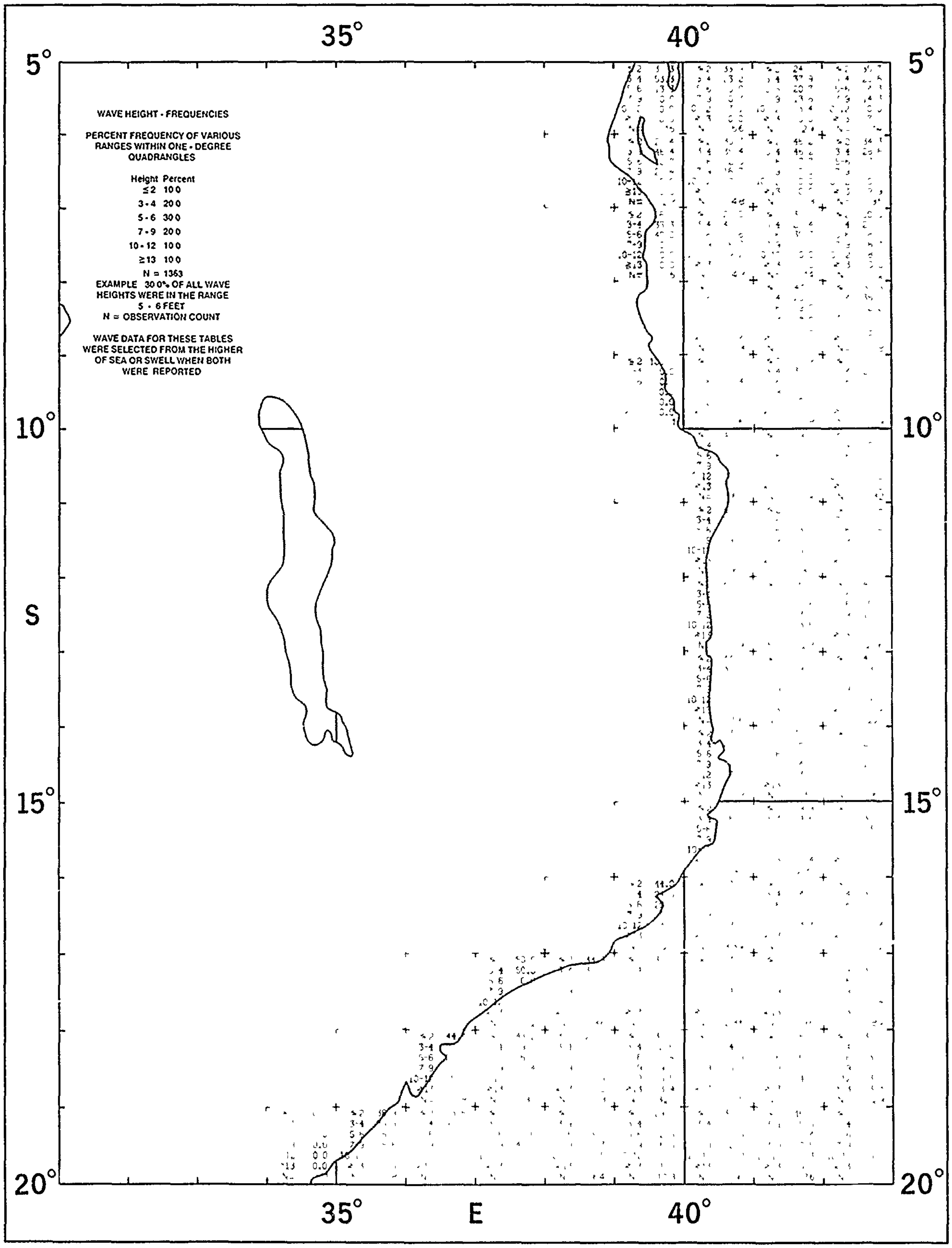
February

Wave Height



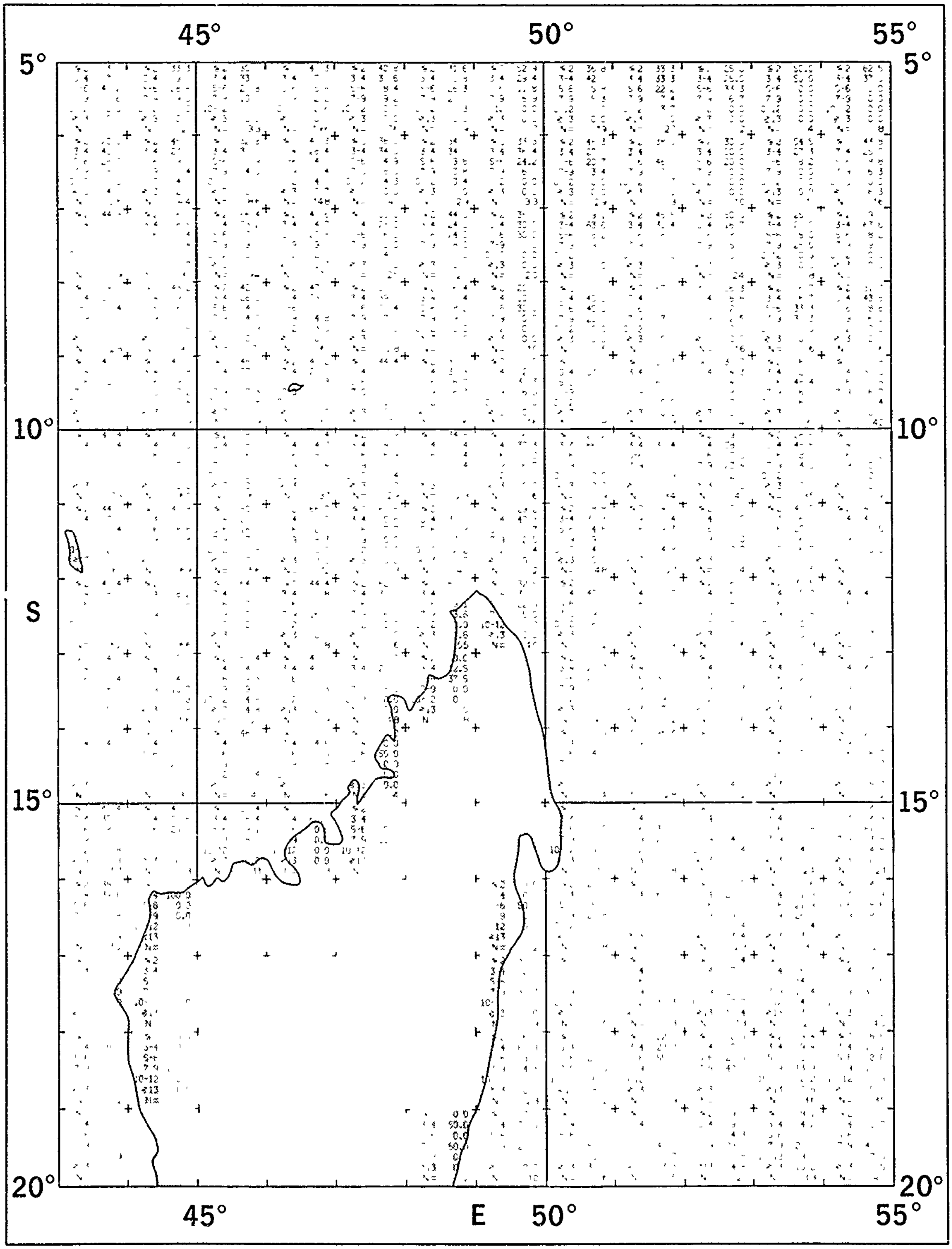
February

Wave Height



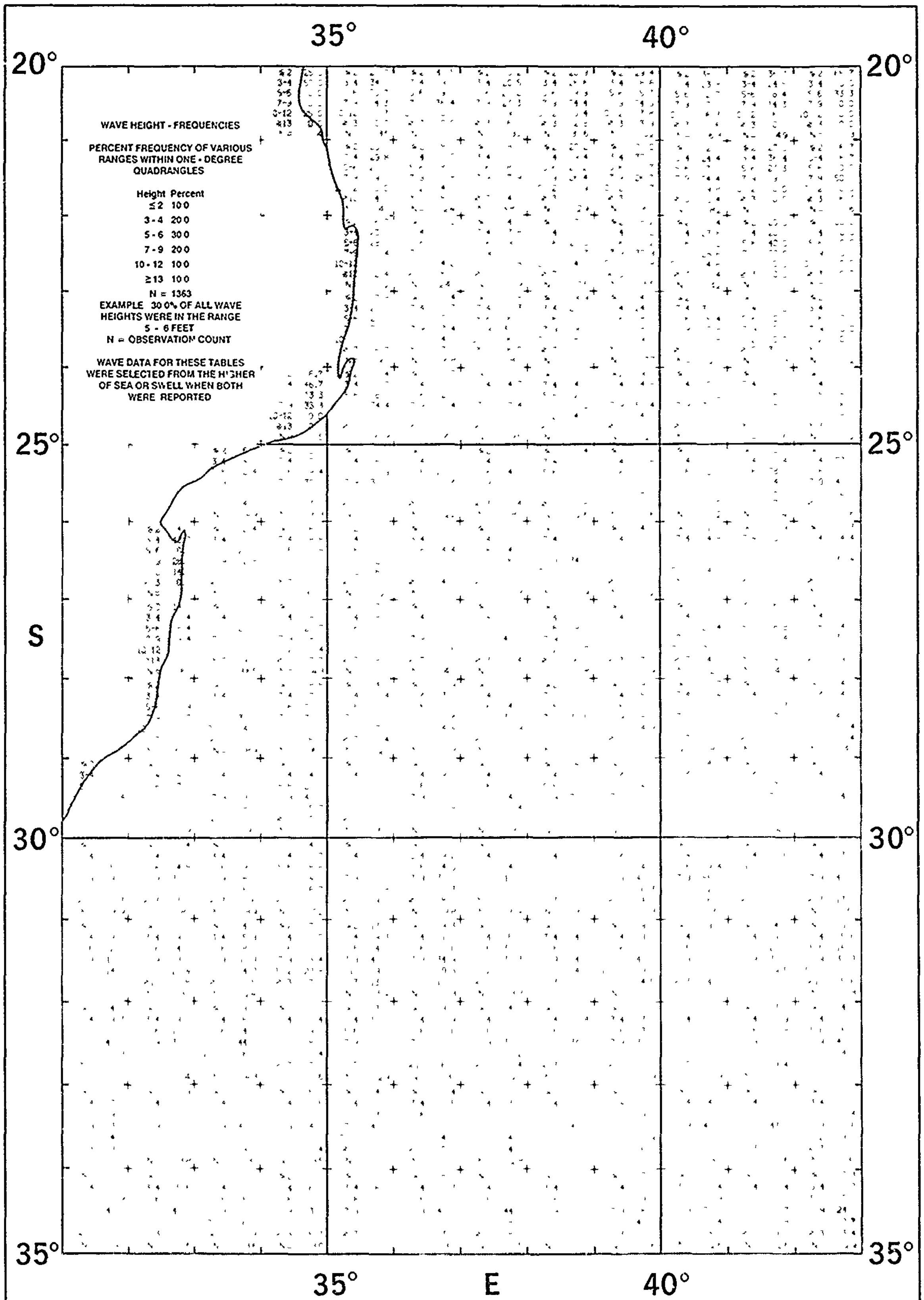
February

Wave Height



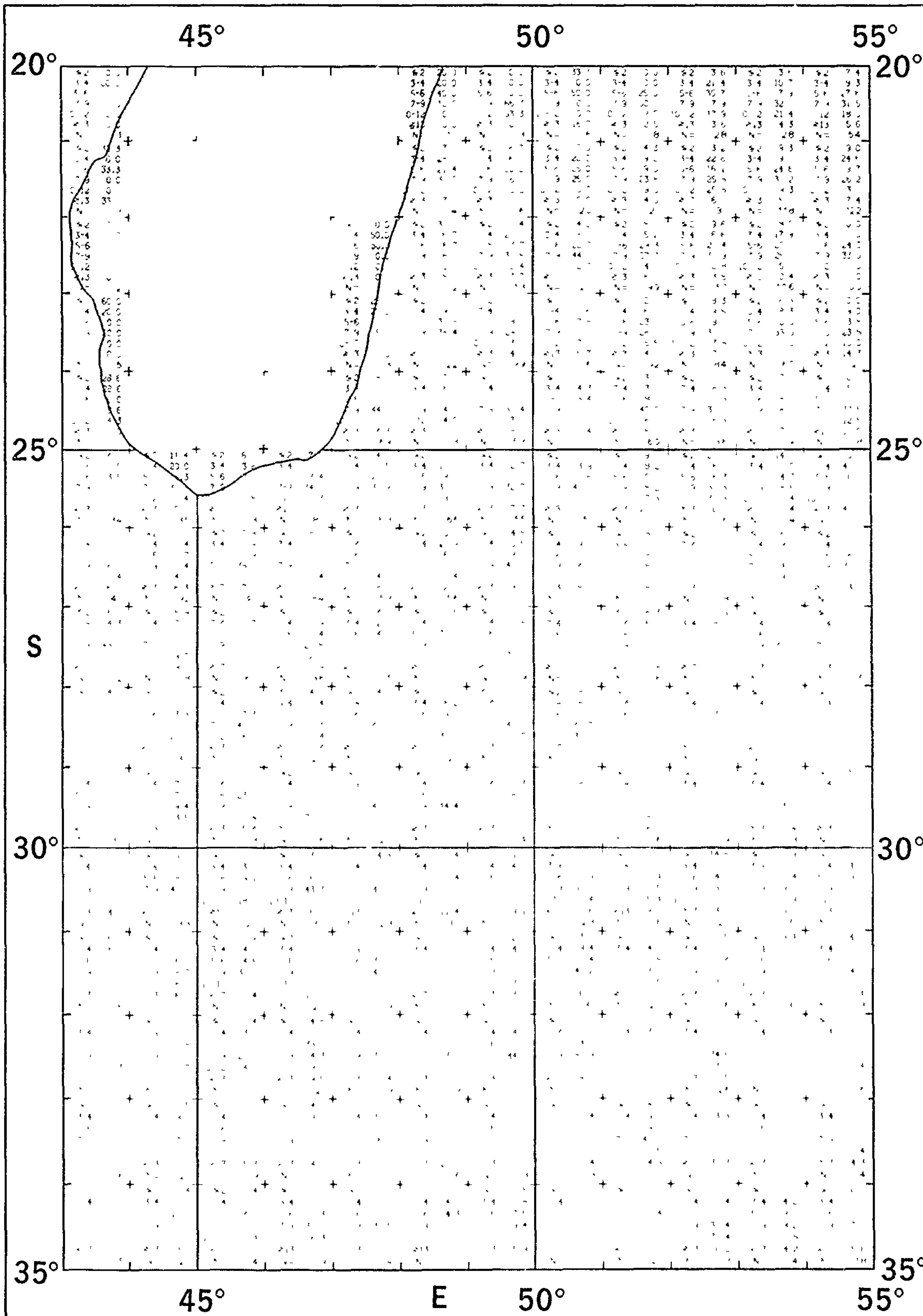
February

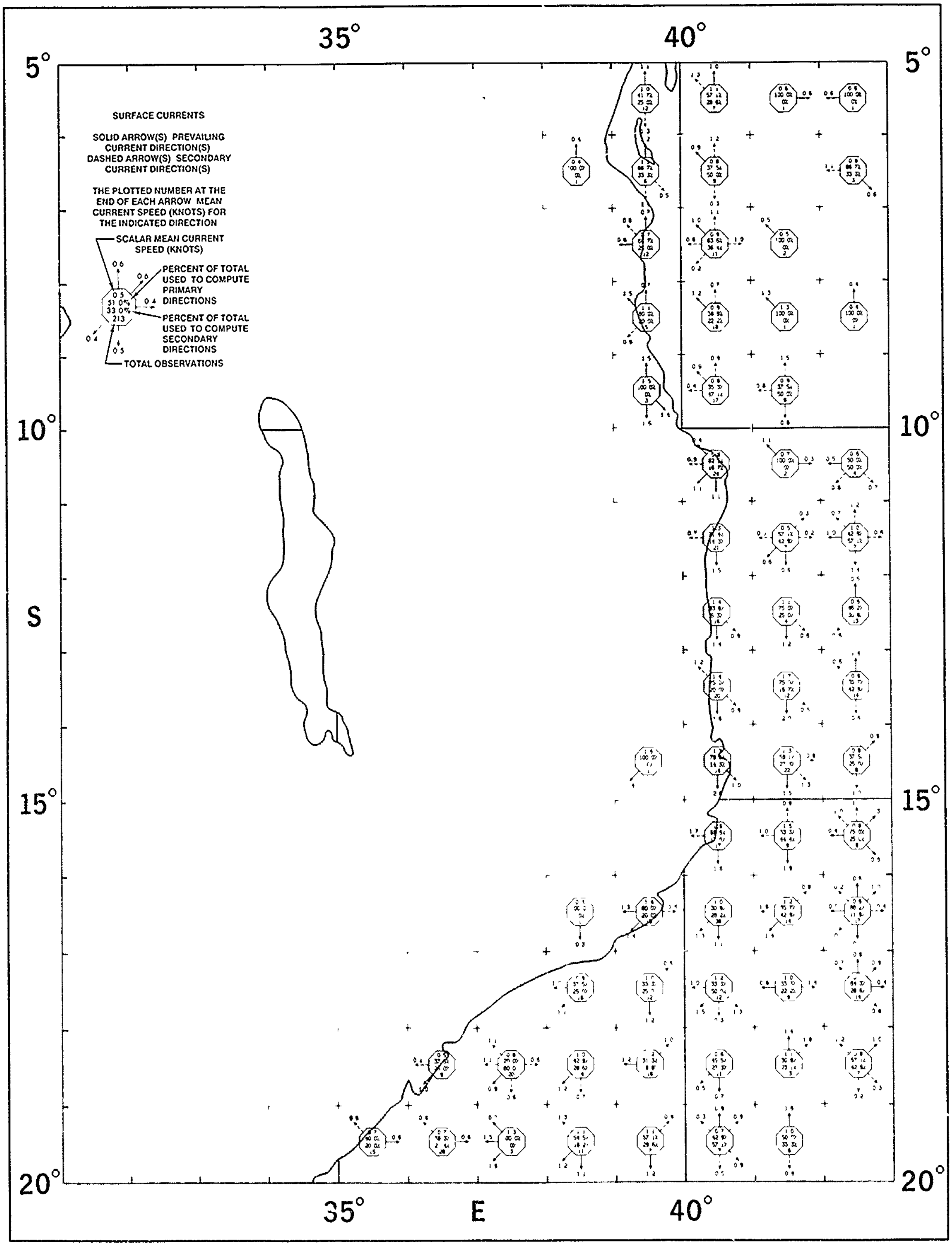
Wave Height



February

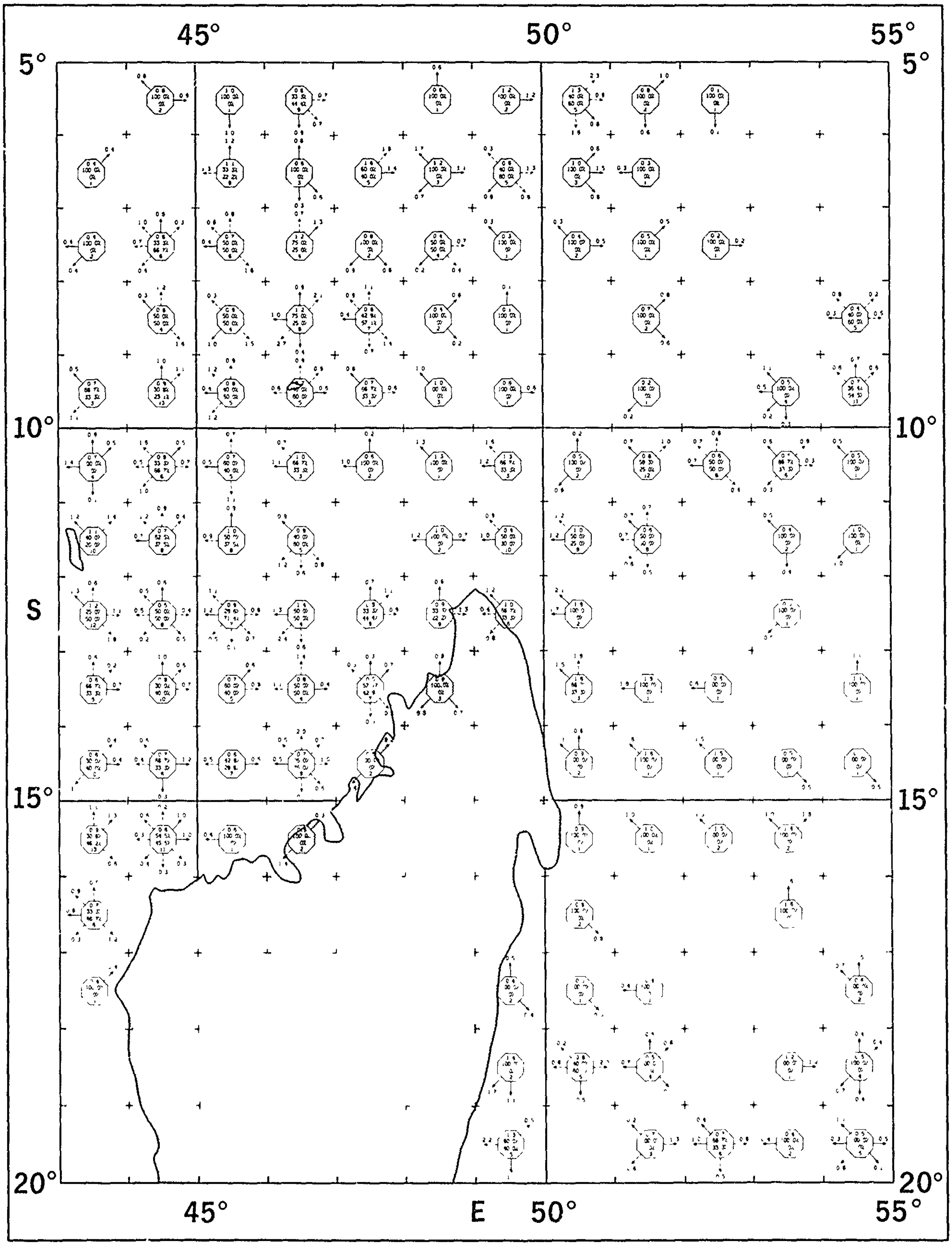
Wave Height

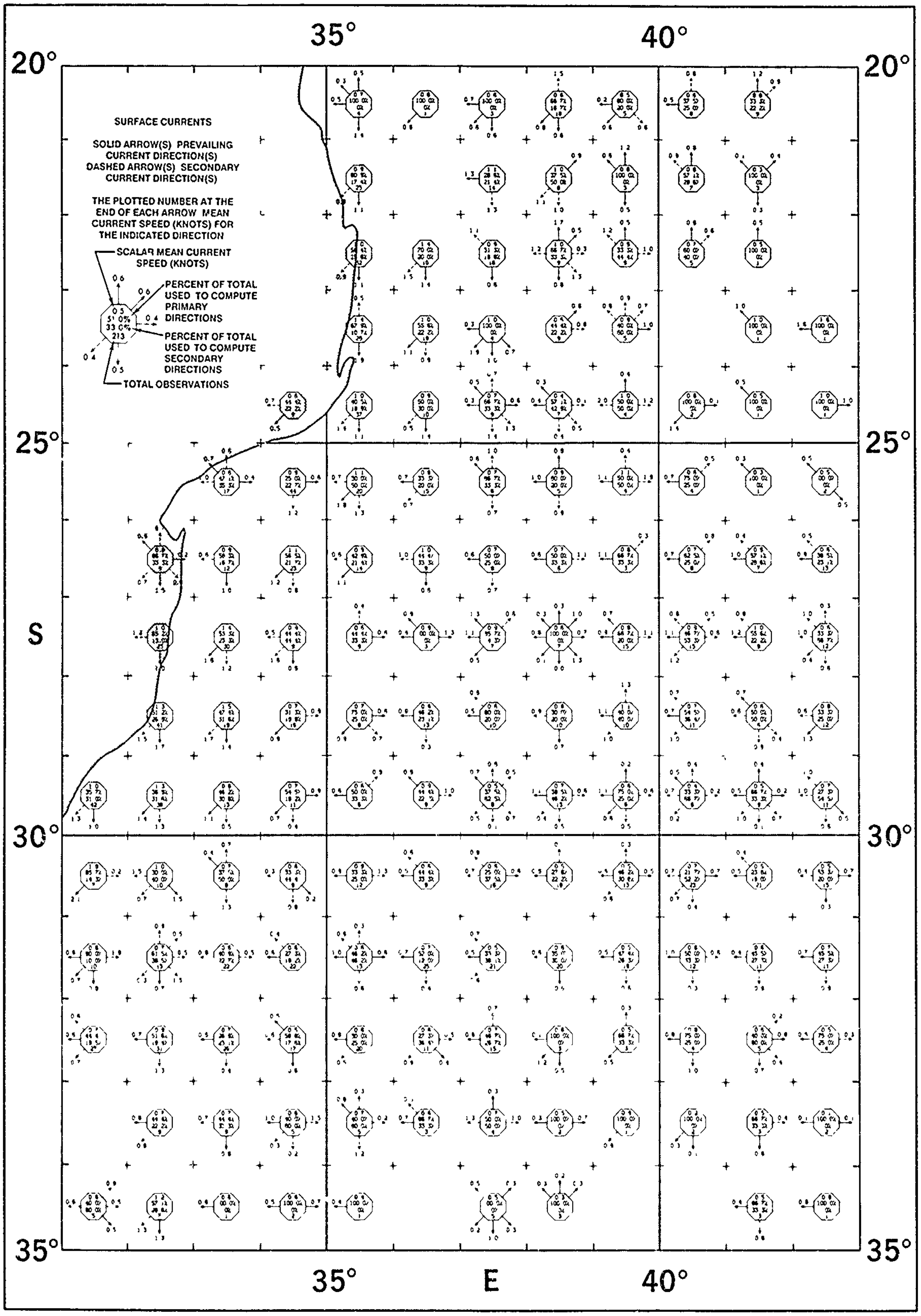


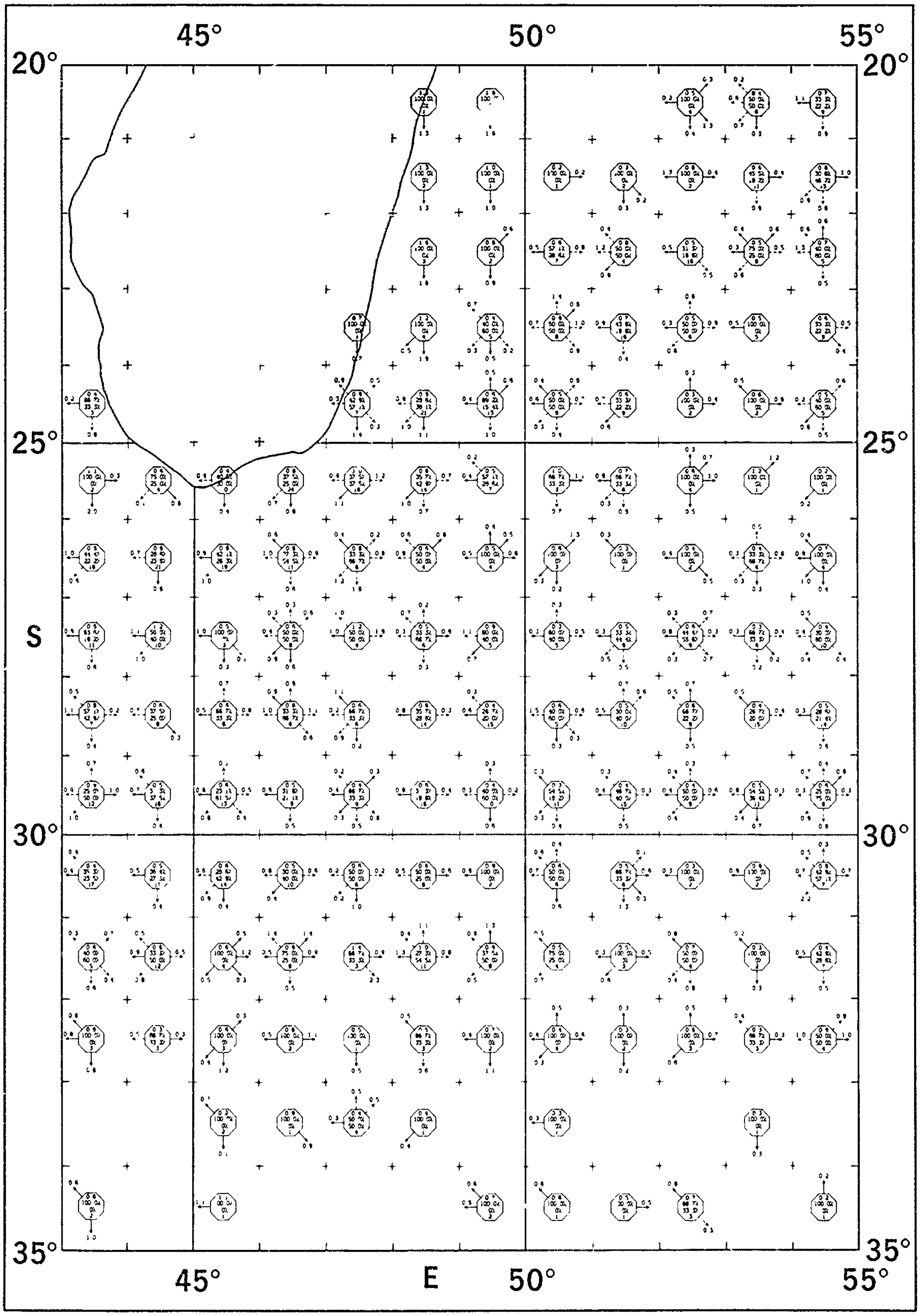

35°
40°
5°
10°
S
15°
20°
E
SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS

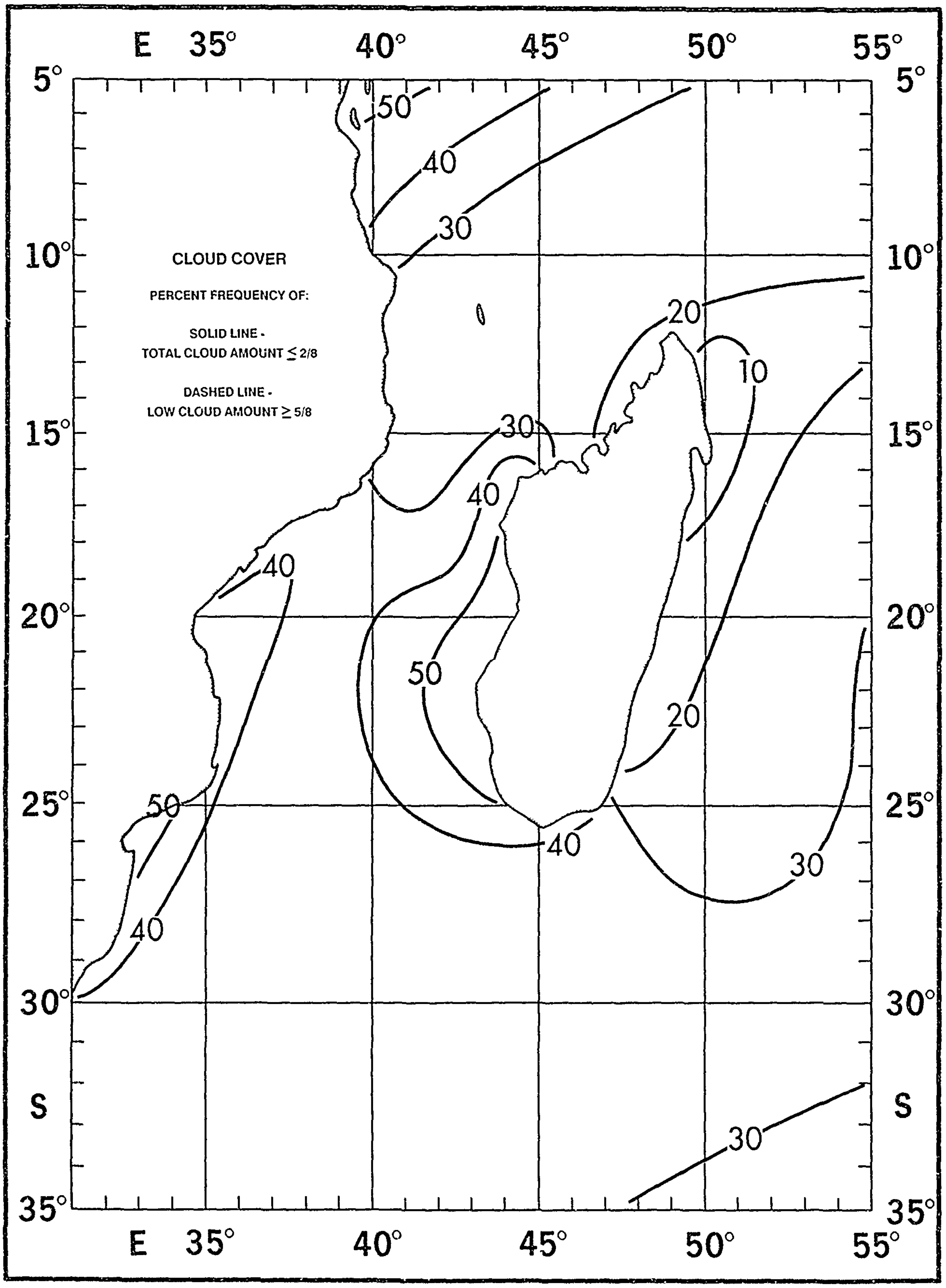
February

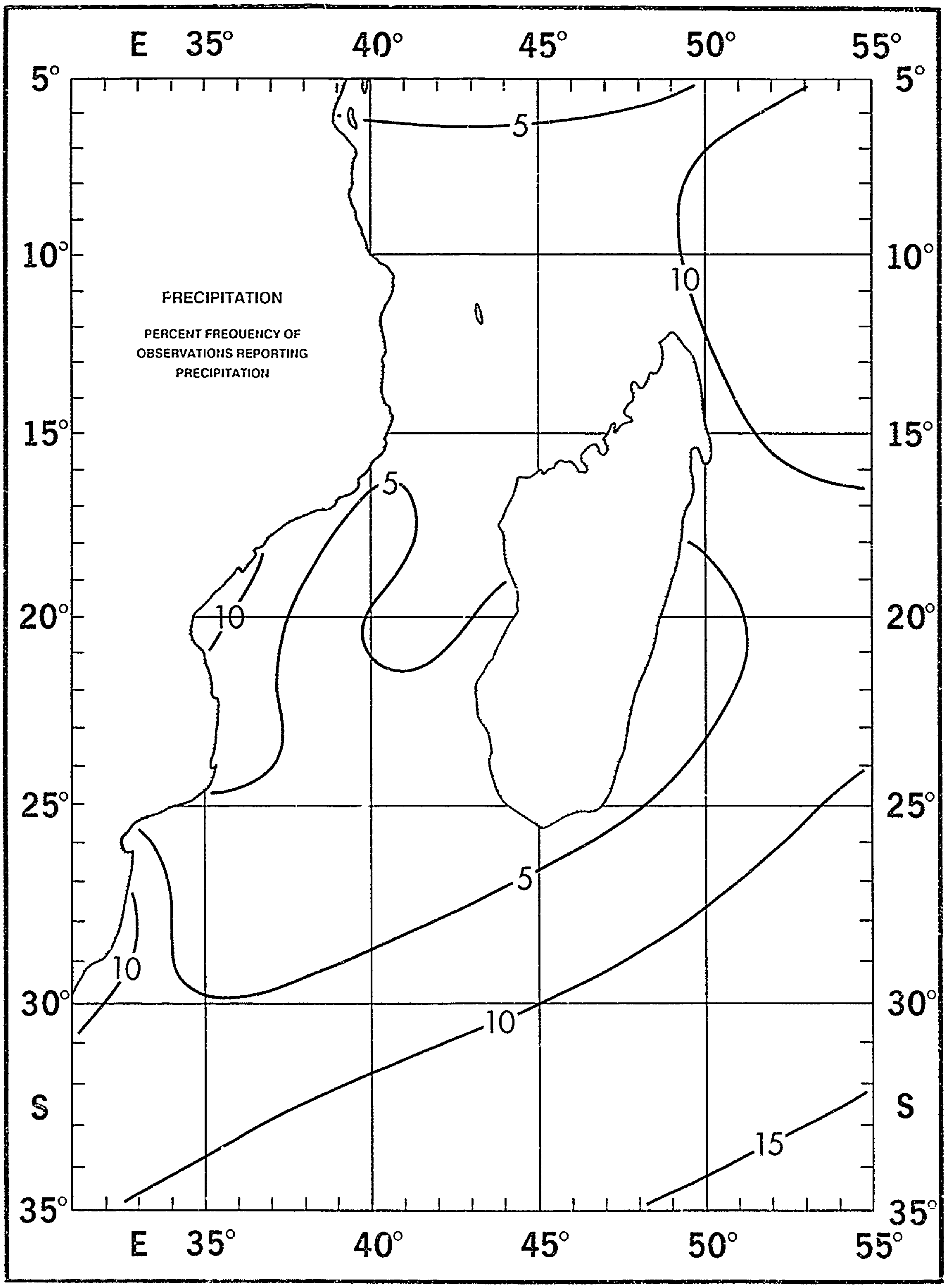
Surface Currents

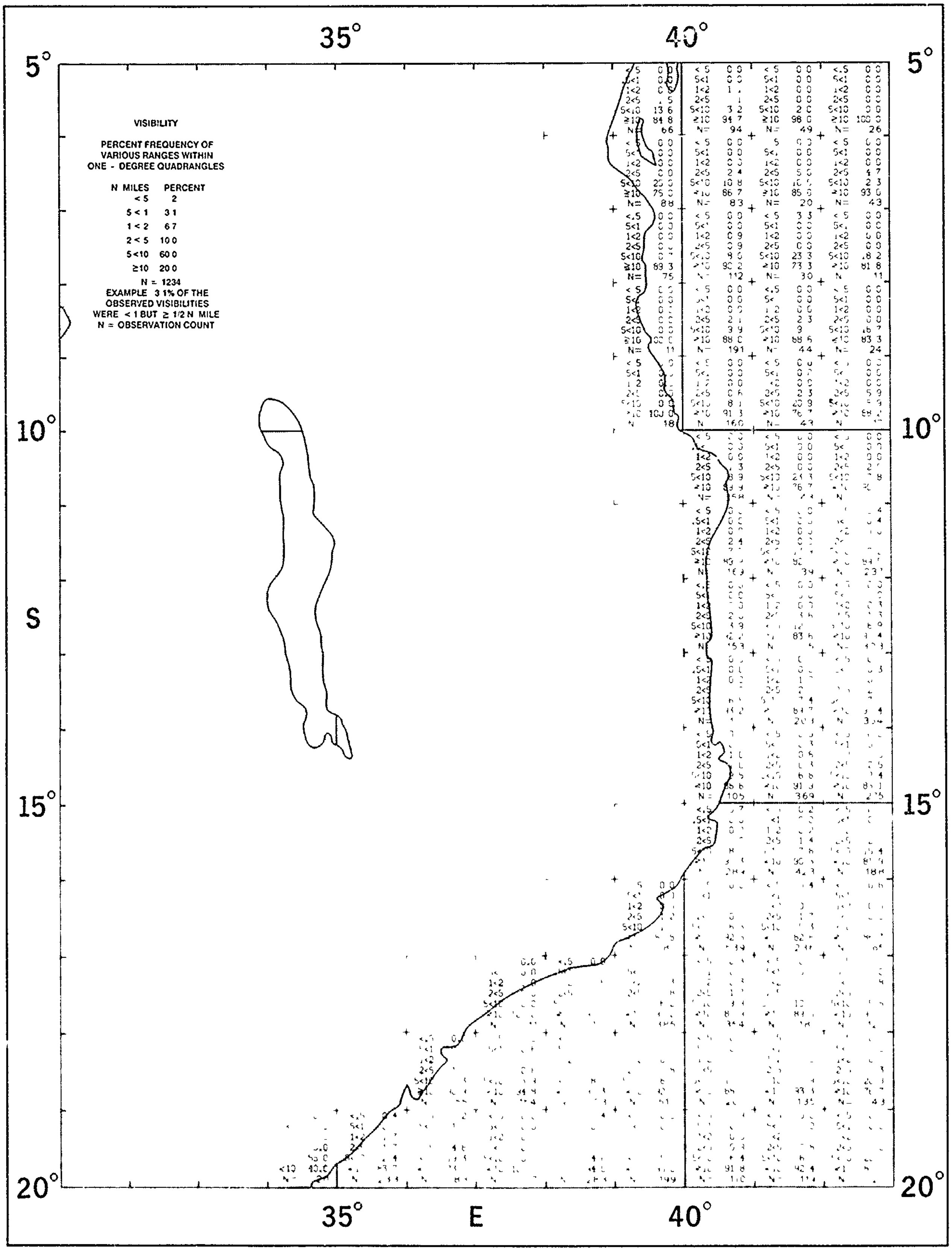


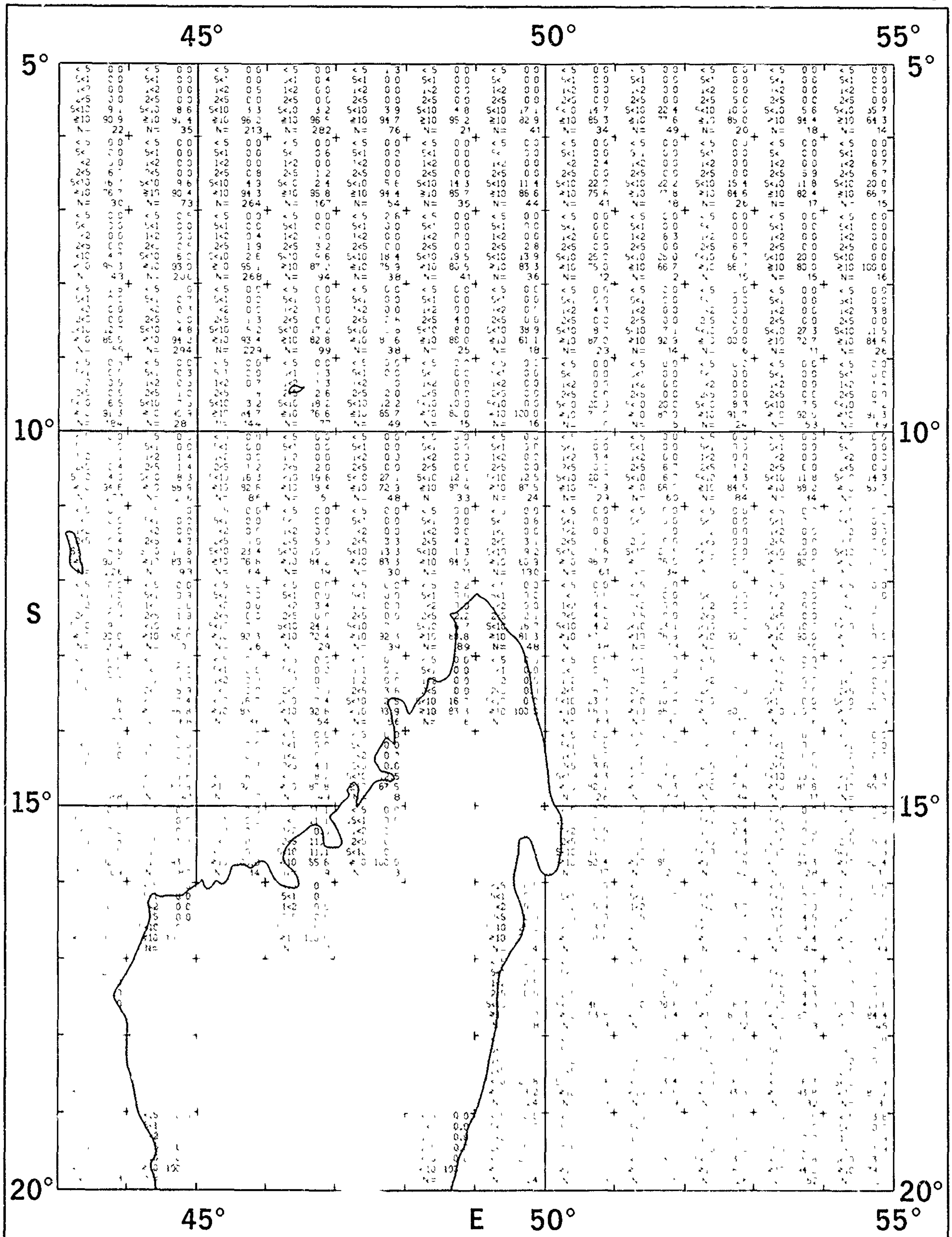

35°
40°
20°
20°
SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS
25°
25°
S
30°
30°
35°
35°
35°
E
40°

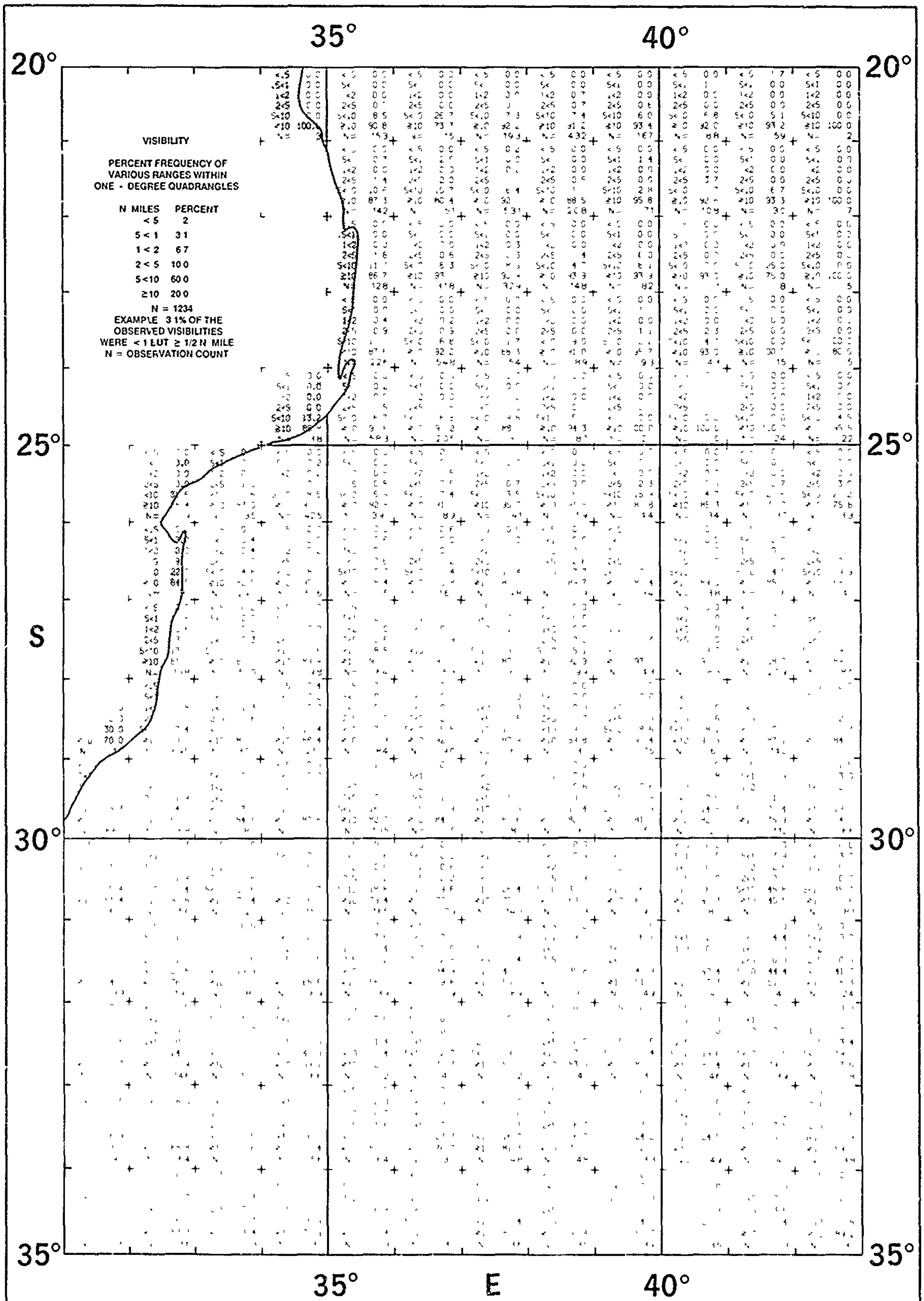

45°
50°
55°
20°
25°
30°
35°
S
E
45°
50°
55°

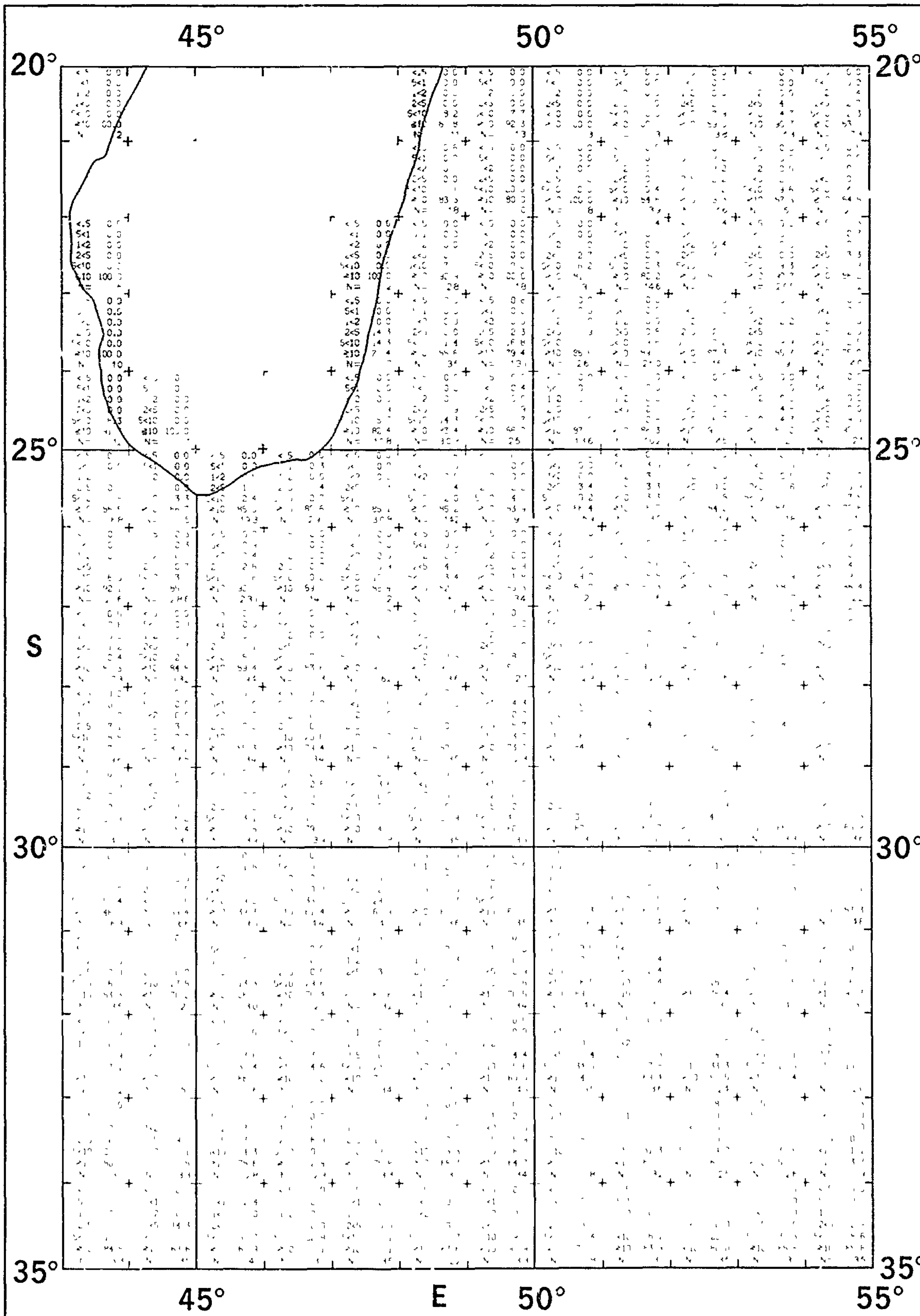

CLOUD COVER
PERCENT FREQUENCY OF:
SOLID LINE - TOTAL CLOUD AMOUNT ≤ 2/8
DASHED LINE - LOW CLOUD AMOUNT ≥ 5/8
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
50
40
30
20
10

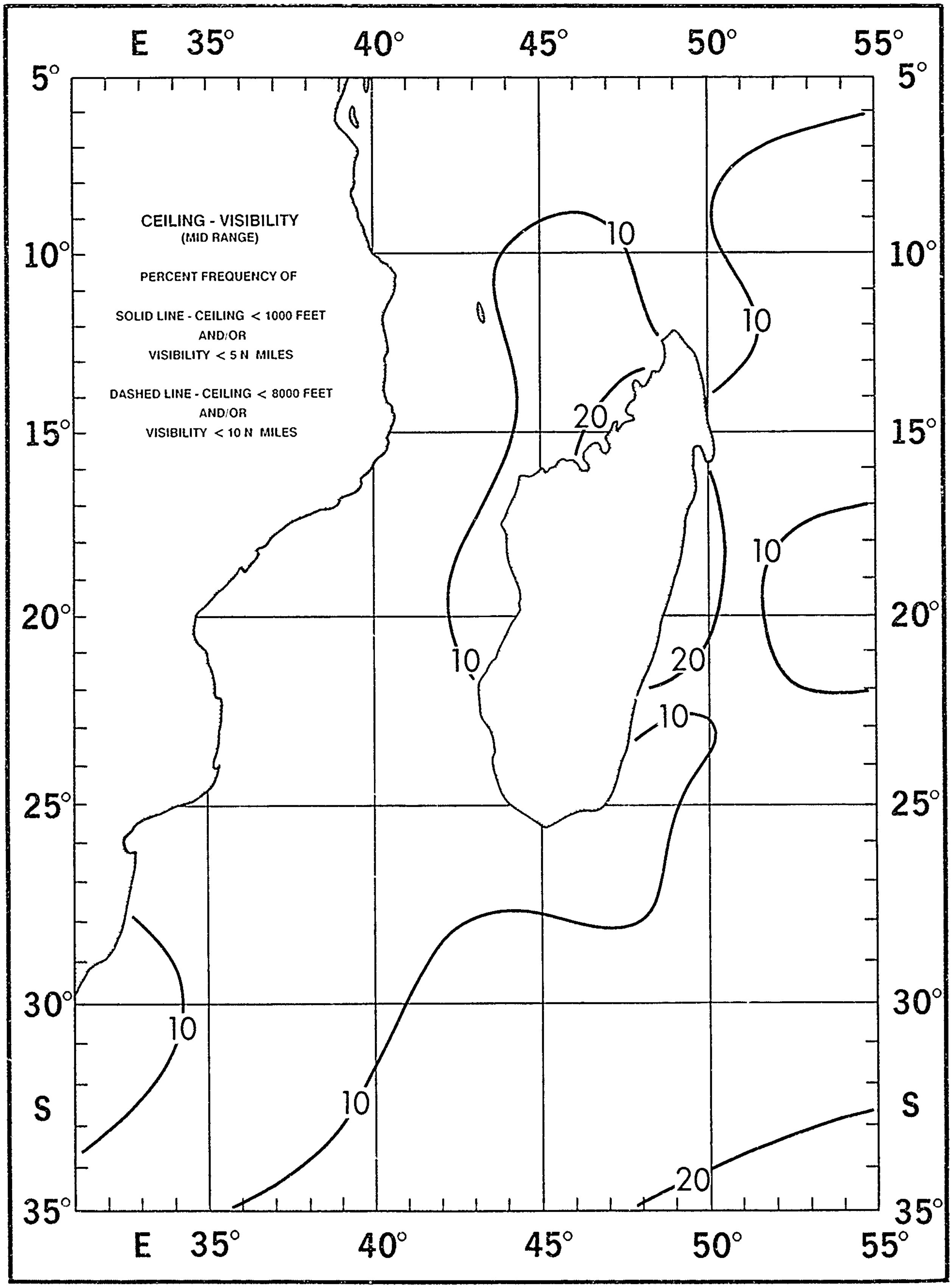

E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
PRECIPITATION
PERCENT FREQUENCY OF OBSERVATIONS REPORTING PRECIPITATION
5
10
15


VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
< 5 2
5 < 1 3 1
1 < 2 6 7
2 < 5 10 0
5 <10 60 0
≥10 20 0
N = 1234
EXAMPLE 3 1% OF THE OBSERVED VISIBILITIES WERE < 1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT
35°
40°
5°
10°
S
15°
20°
E

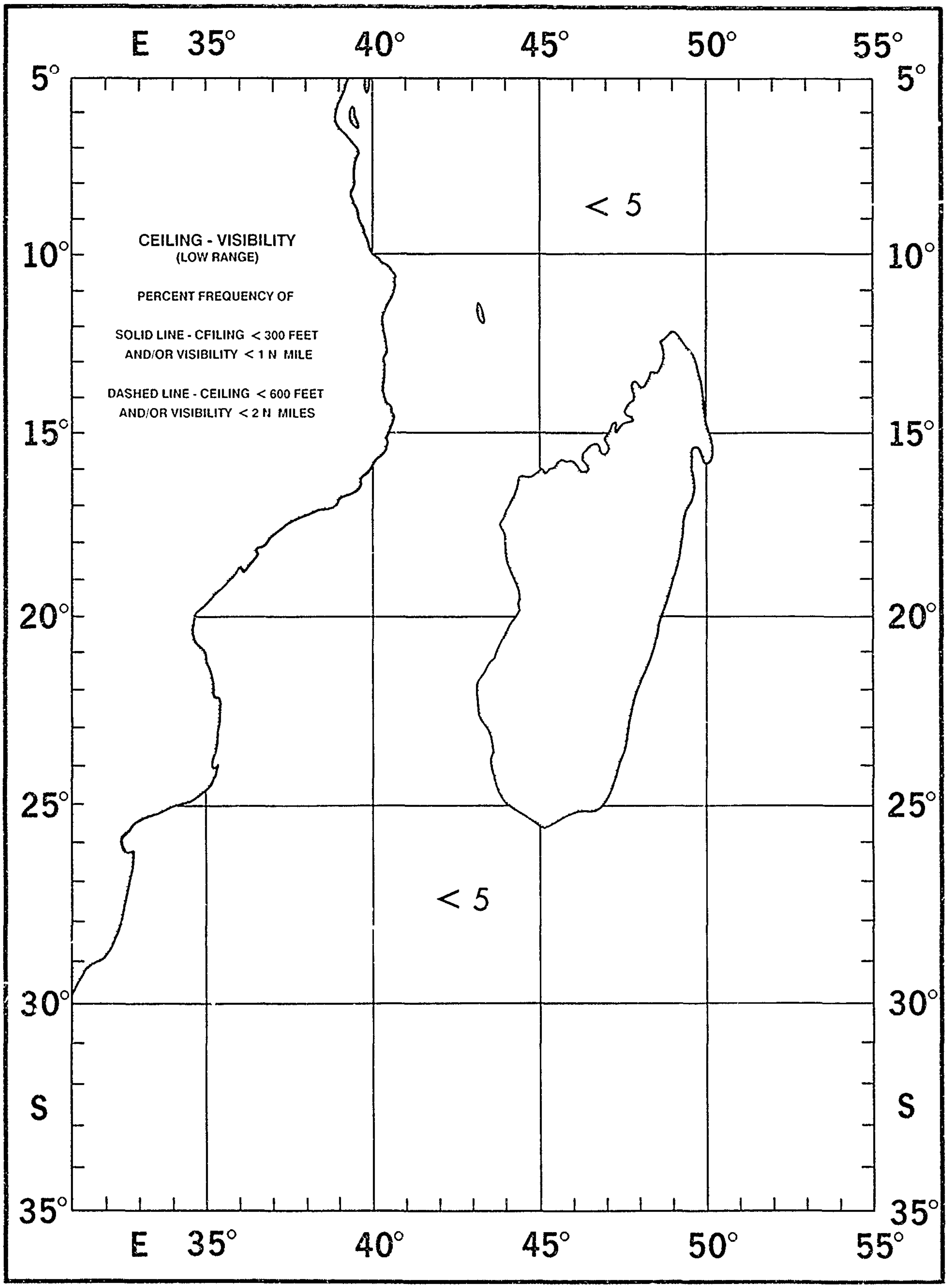

45°
50°
55°
5°
10°
15°
20°
S
E

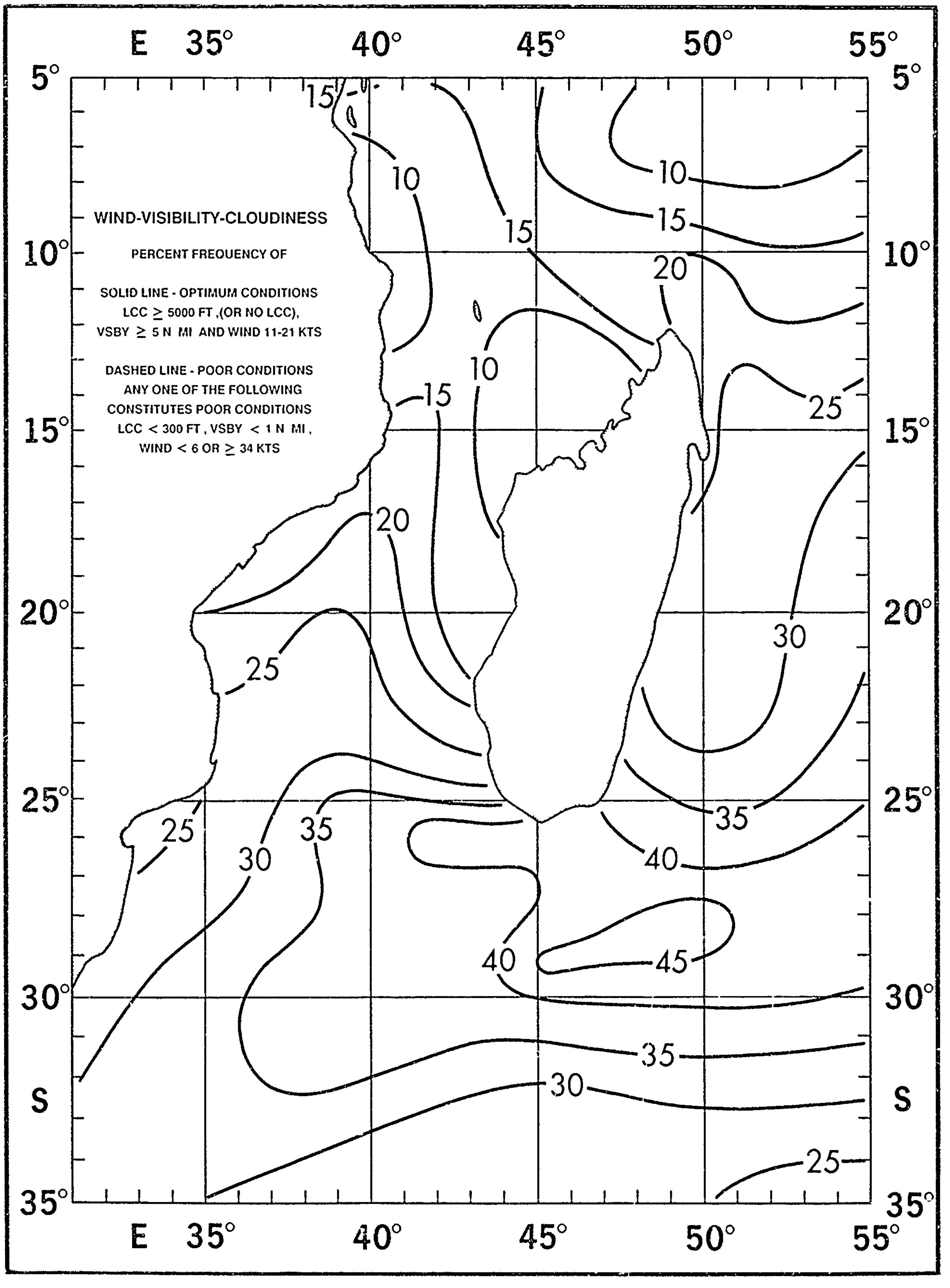

35°
40°
20°
20°
VISIBILITY
PERCENT FREQUENCY OF
VARIOUS RANGES WITHIN
ONE - DEGREE QUADRANGLES
N MILES PERCENT
<5 2
5<1 31
1<2 67
2<5 100
5<10 600
≥10 200
N = 1234
EXAMPLE 3.1% OF THE
OBSERVED VISIBILITIES
WERE <1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT
25°
25°
S
30°
30°
35°
35°
35°
E
40°

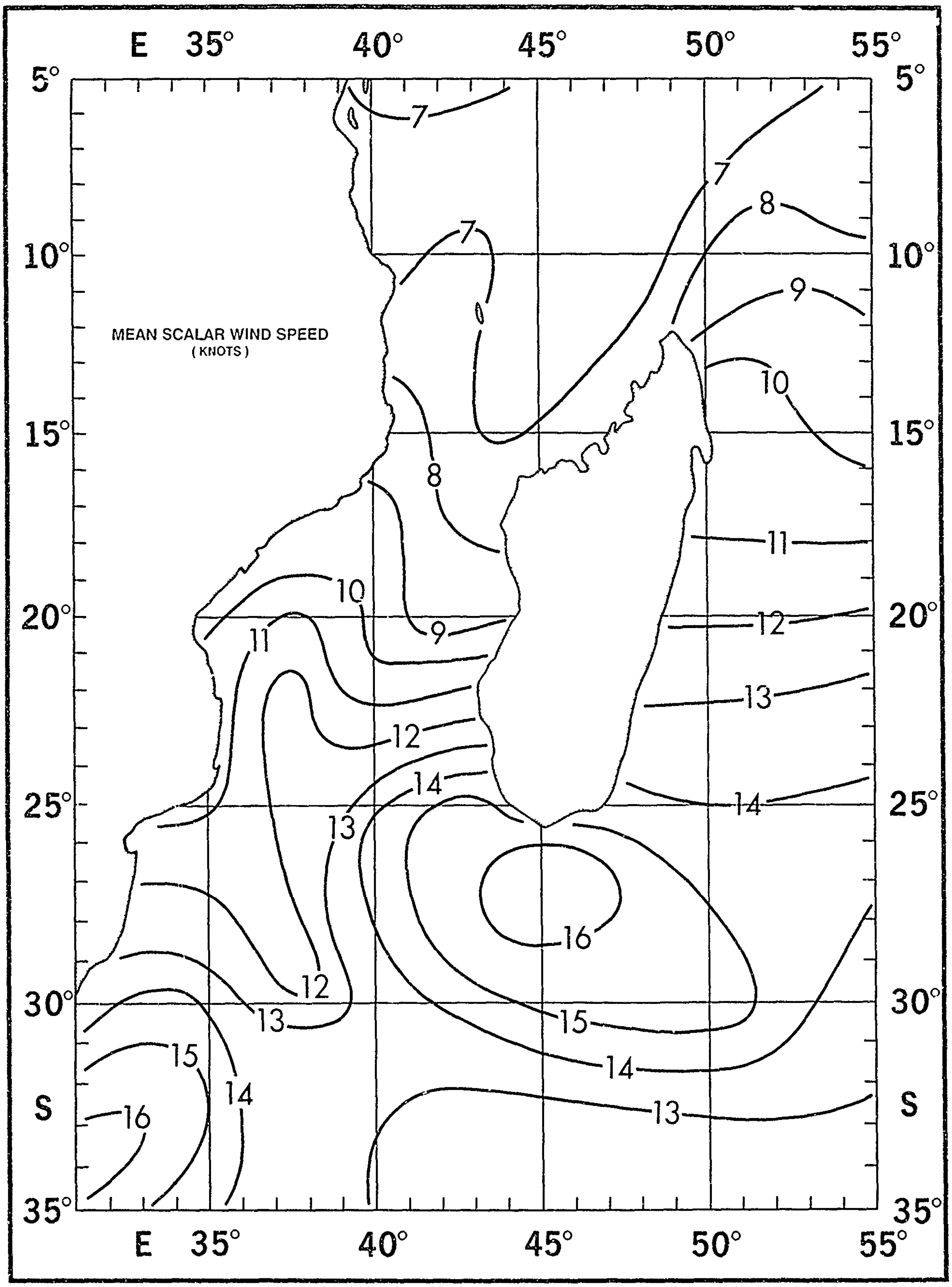

45°
50°
55°
20°
25°
30°
35°
S
E



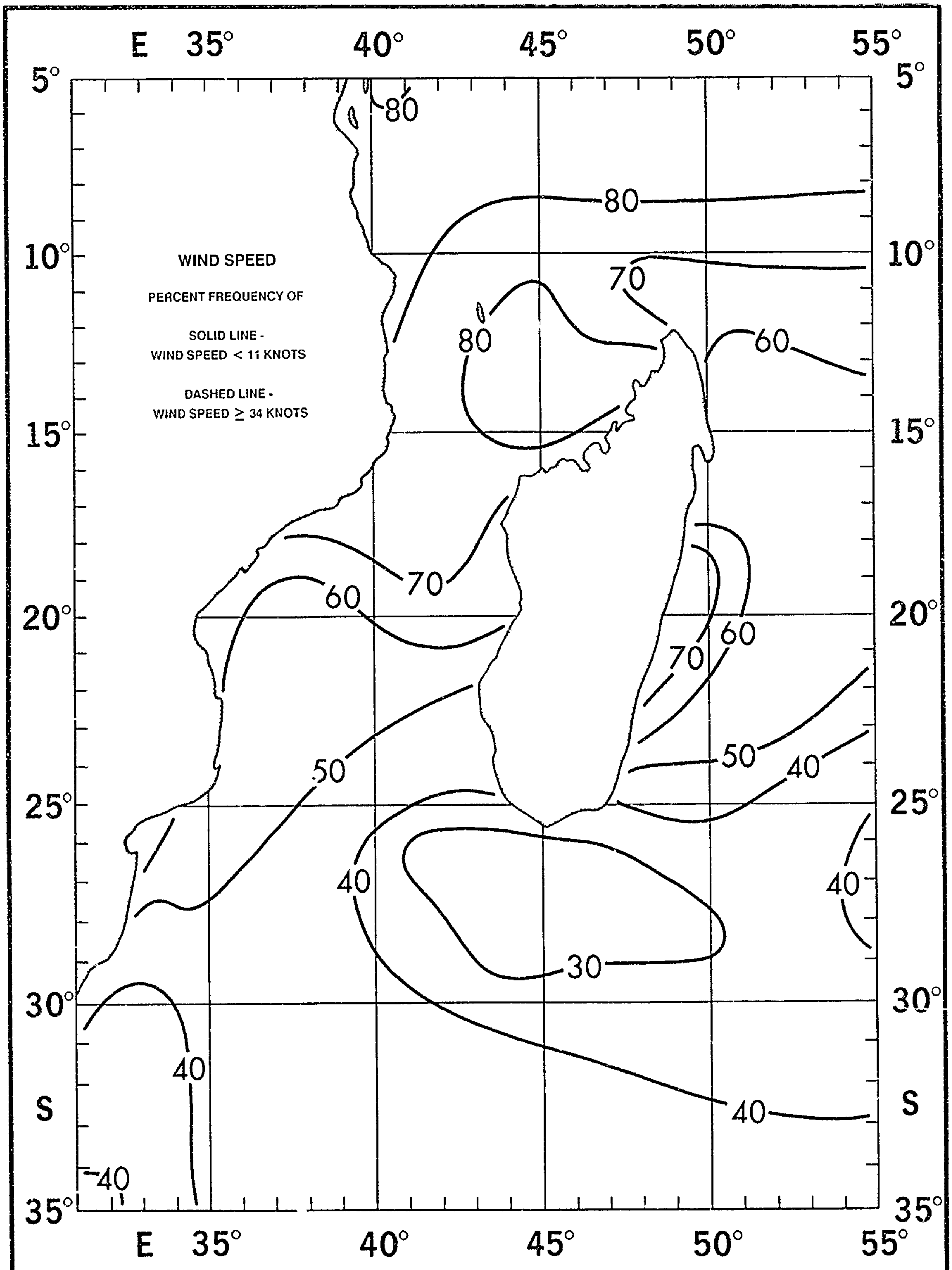
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
CEILING - VISIBILITY
(MID RANGE)
PERCENT FREQUENCY OF
SOLID LINE - CEILING < 1000 FEET
AND/OR
VISIBILITY < 5 N MILES
DASHED LINE - CEILING < 8000 FEET
AND/OR
VISIBILITY < 10 N MILES
10
20


E 35°
40°
45°
50°
55°
5°
10°
15°
20°
25°
30°
S
35°
CEILING - VISIBILITY
(LOW RANGE)
PERCENT FREQUENCY OF
SOLID LINE - CFILING < 300 FEET
AND/OR VISIBILITY < 1 N MILE
DASHED LINE - CEILING < 600 FEET
AND/OR VISIBILITY < 2 N MILES
< 5
< 5

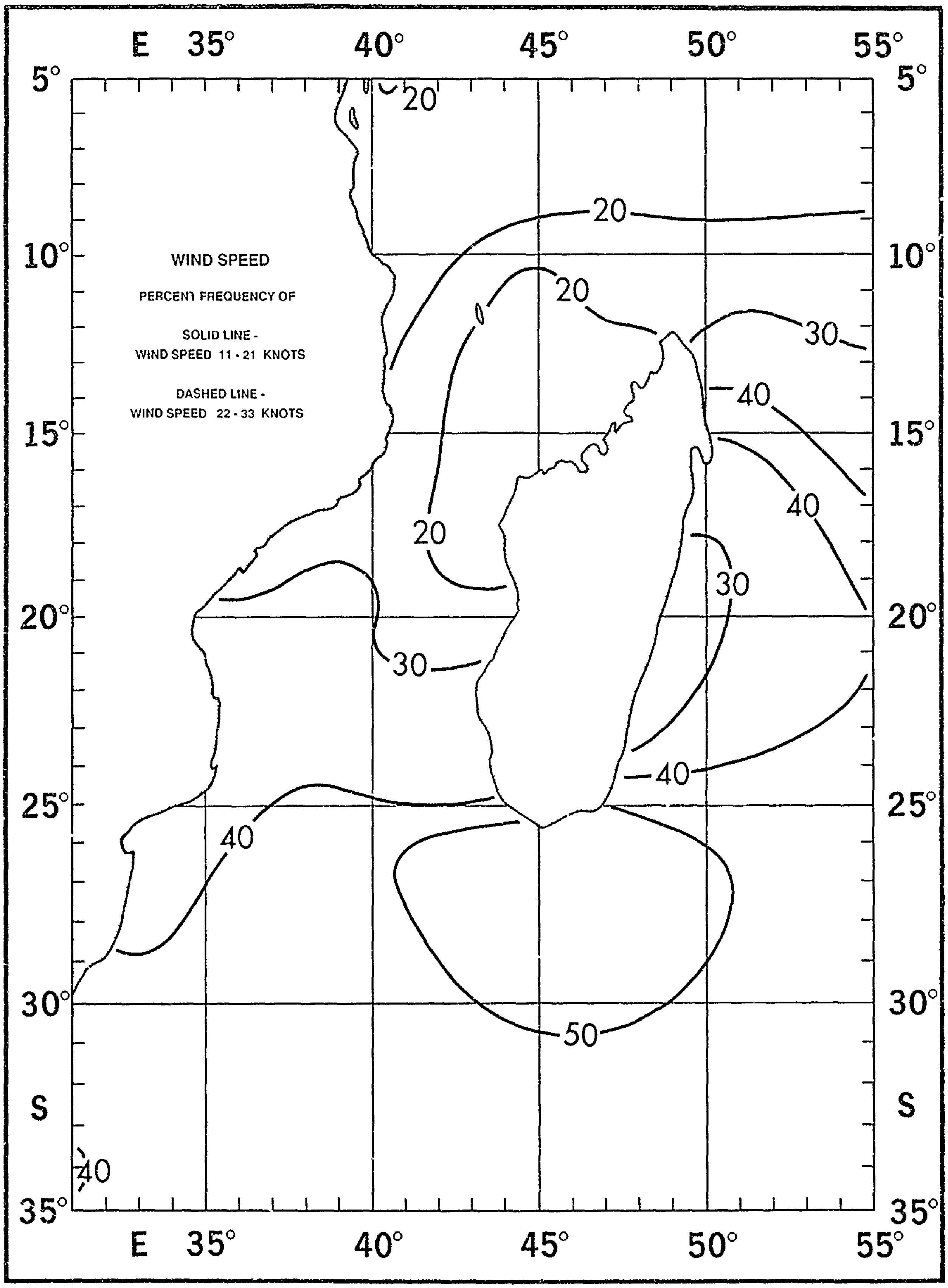

E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
WIND-VISIBILITY-CLOUDINESS
PERCENT FREQUENCY OF
SOLID LINE - OPTIMUM CONDITIONS
LCC ≥ 5000 FT ,(OR NO LCC),
VSBY ≥ 5 N MI AND WIND 11-21 KTS
DASHED LINE - POOR CONDITIONS
ANY ONE OF THE FOLLOWING
CONSTITUTES POOR CONDITIONS
LCC < 300 FT , VSBY < 1 N MI ,
WIND < 6 OR ≥ 34 KTS
10
15
20
25
30
35
40
45

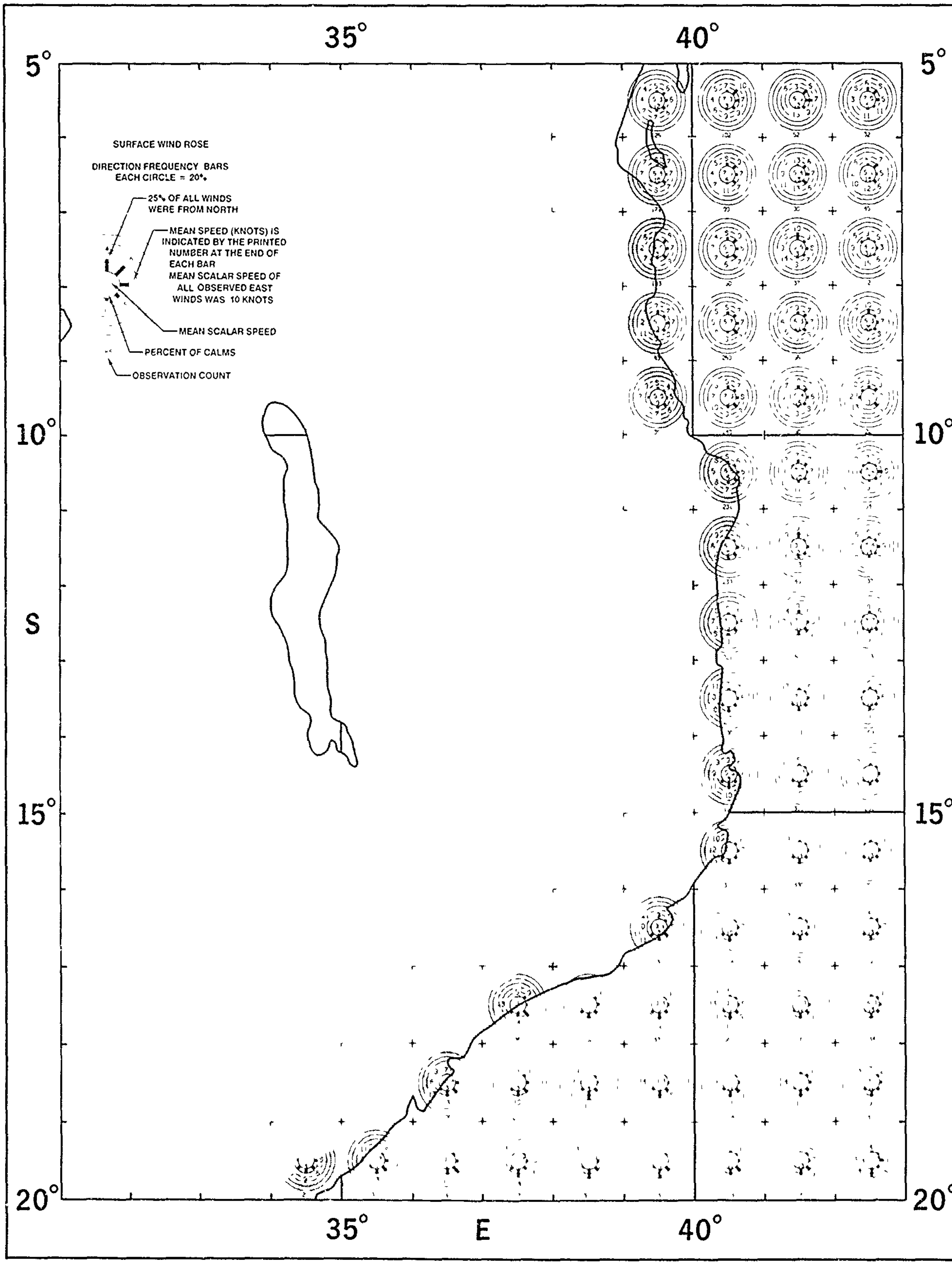

E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
MEAN SCALAR WIND SPEED
(KNOTS)
7
8
9
10
11
12
13
14
15
16

March Wind Speed <11 and ≥34 Knots

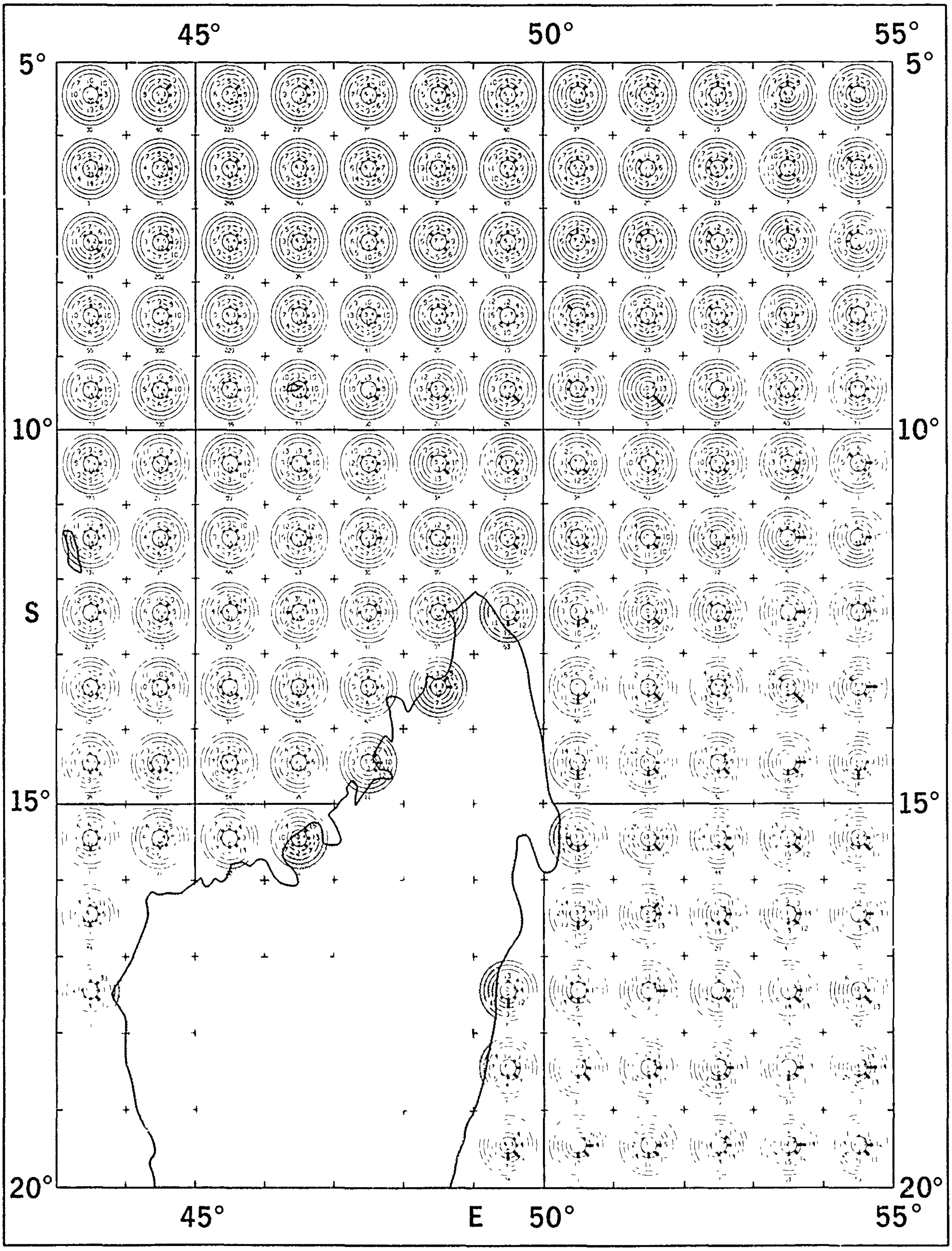


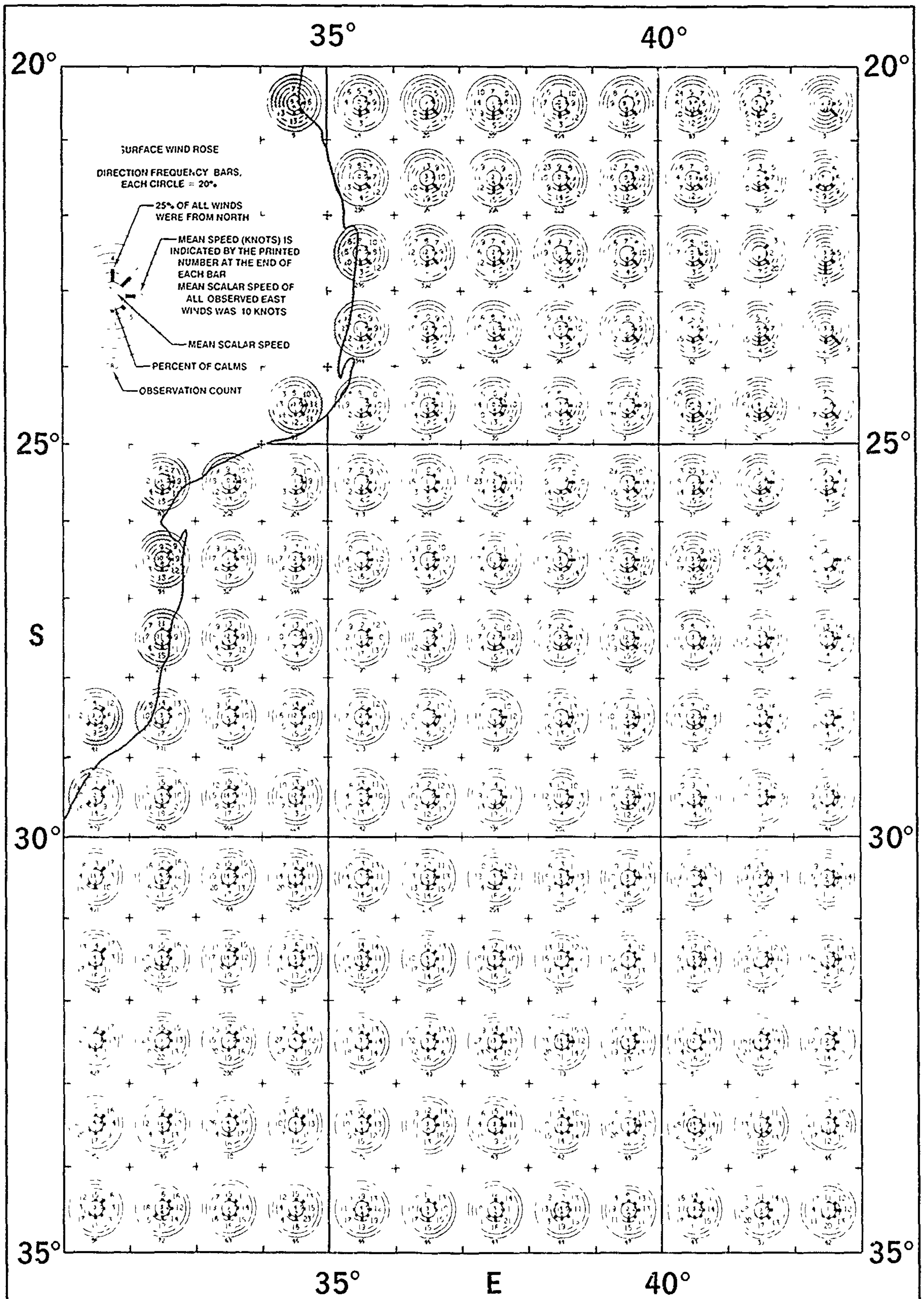
March — Wind Speed 11 - 21 and 22 - 33 Knots

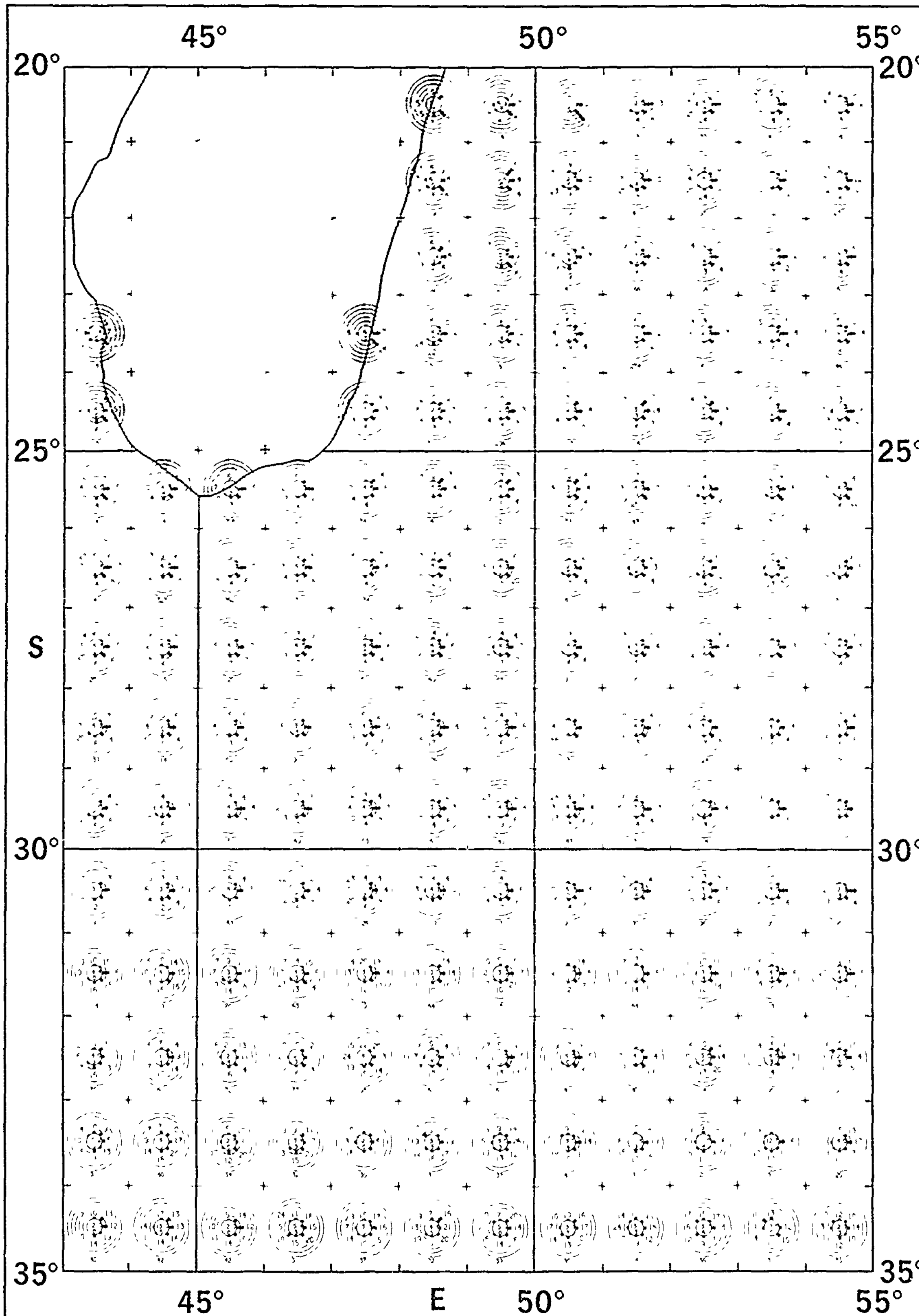


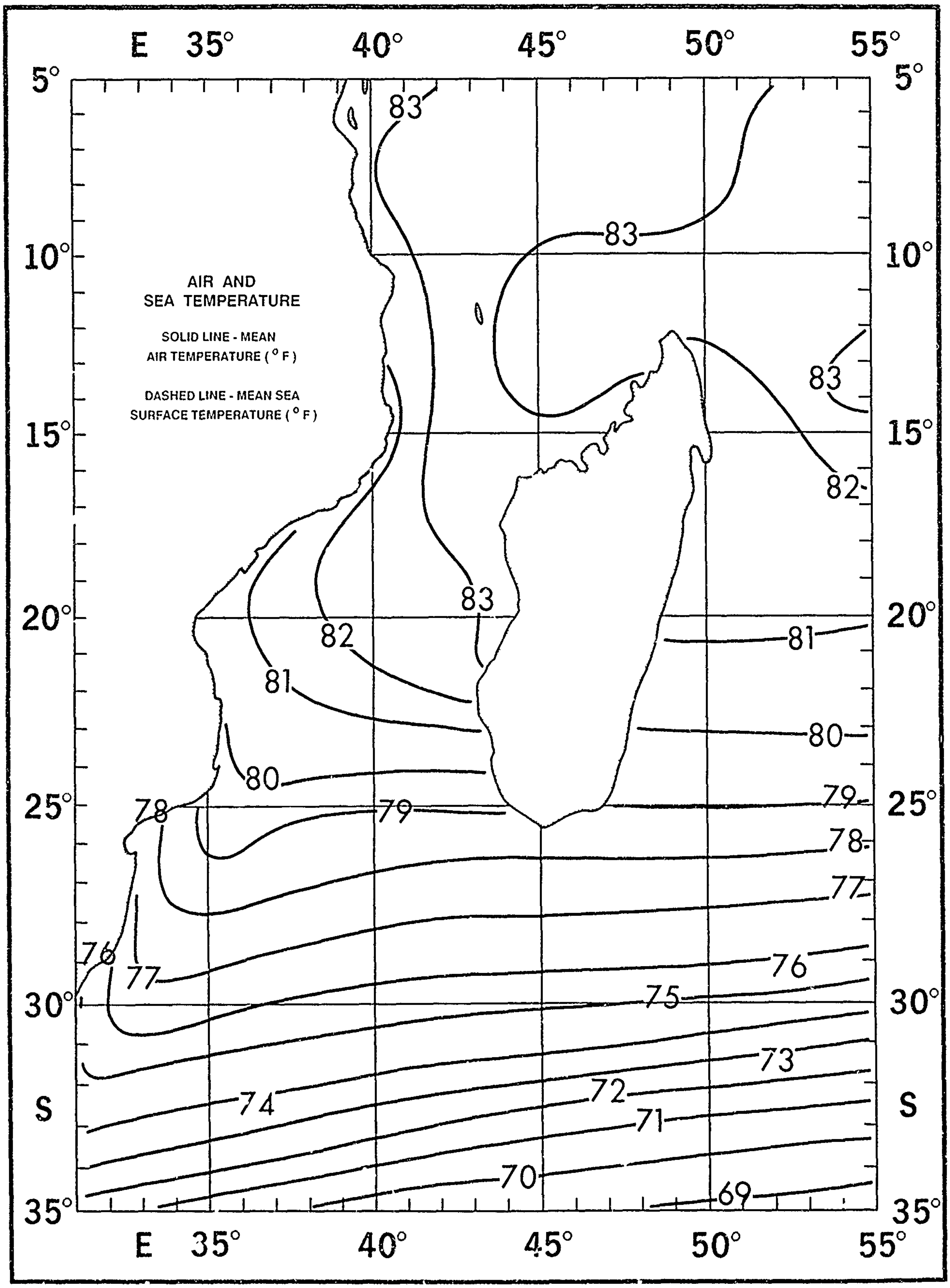

35°
40°
5°
5°
SURFACE WIND ROSE
DIRECTION FREQUENCY BARS
EACH CIRCLE = 20%
25% OF ALL WINDS
WERE FROM NORTH
MEAN SPEED (KNOTS) IS
INDICATED BY THE PRINTED
NUMBER AT THE END OF
EACH BAR
MEAN SCALAR SPEED OF
ALL OBSERVED EAST
WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT
10°
10°
S
15°
15°
20°
20°
35°
E
40°

March — Surface Wind Roses



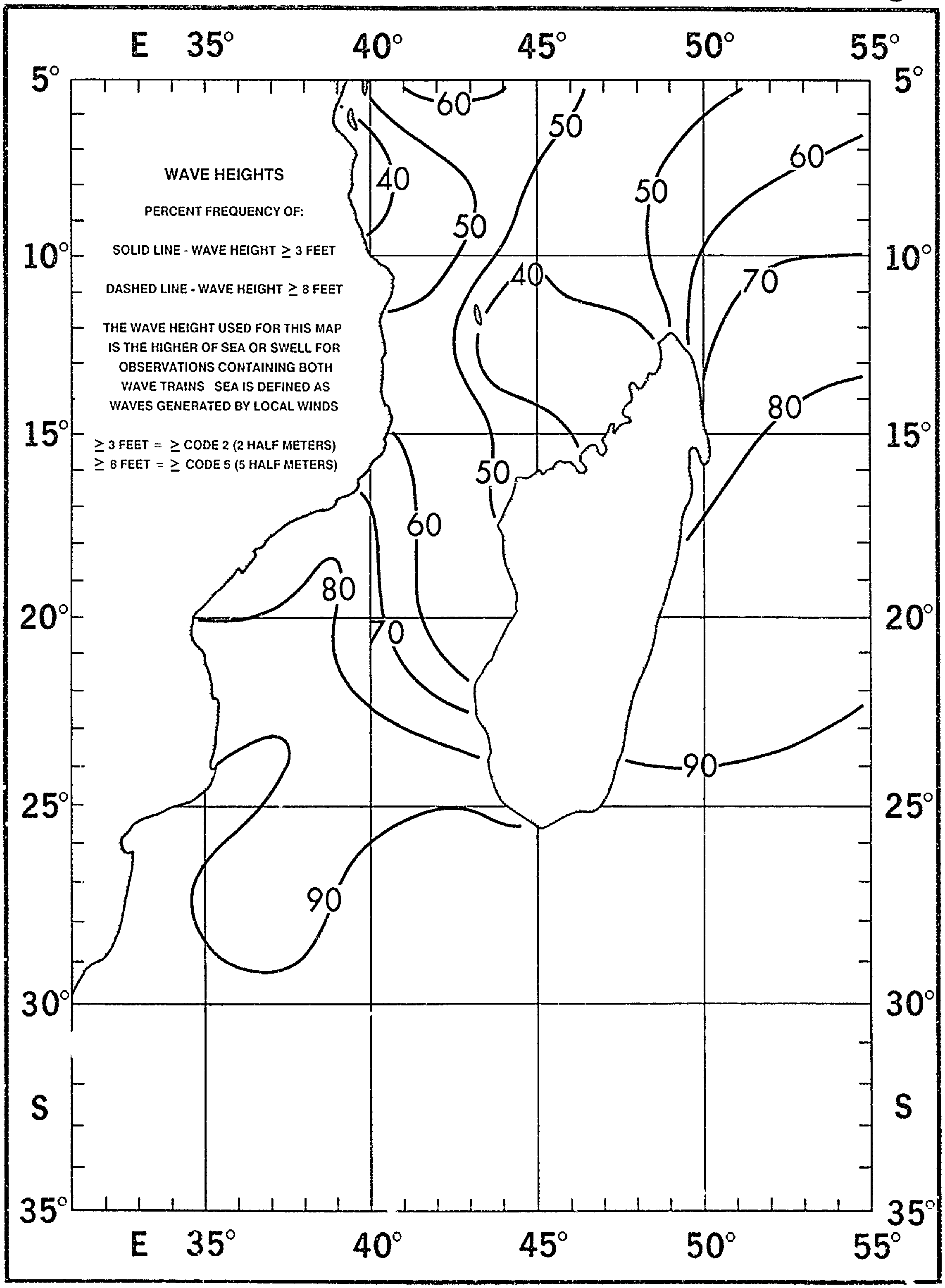

35°
40°
20°
20°
SURFACE WIND ROSE
DIRECTION FREQUENCY BARS, EACH CIRCLE = 20%
25% OF ALL WINDS WERE FROM NORTH
MEAN SPEED (KNOTS) IS INDICATED BY THE PRINTED NUMBER AT THE END OF EACH BAR
MEAN SCALAR SPEED OF ALL OBSERVED EAST WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT
25°
25°
S
30°
30°
35°
35°
35°
E
40°

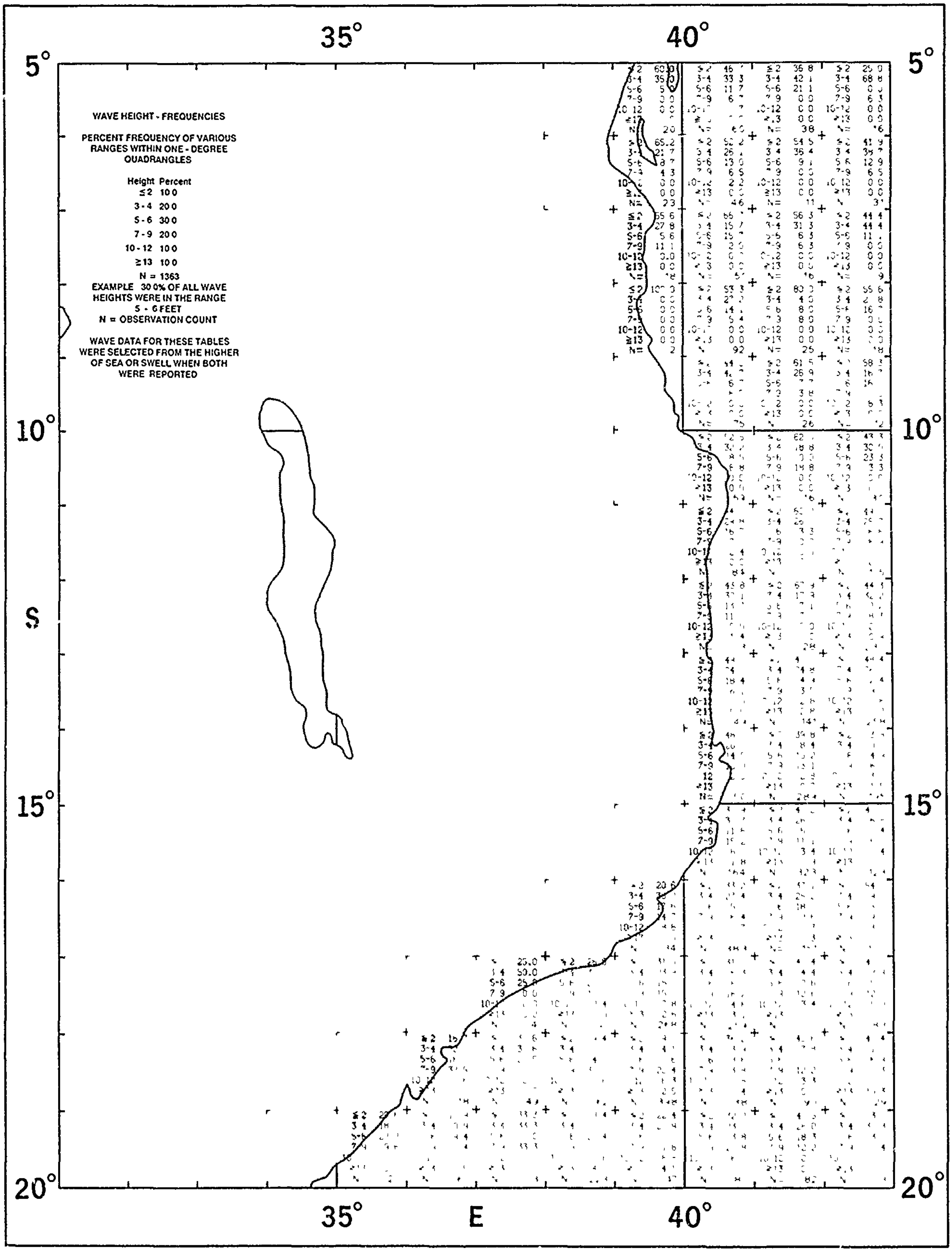

45°
50°
55°
20°
20°
25°
25°
S
30°
30°
35°
35°
45°
E
50°
55°


E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
AIR AND SEA TEMPERATURE
SOLID LINE - MEAN AIR TEMPERATURE (°F)
DASHED LINE - MEAN SEA SURFACE TEMPERATURE (°F)
83
82
81
80
79
78
77
76
75
74
73
72
71
70
69

March

Wave Height

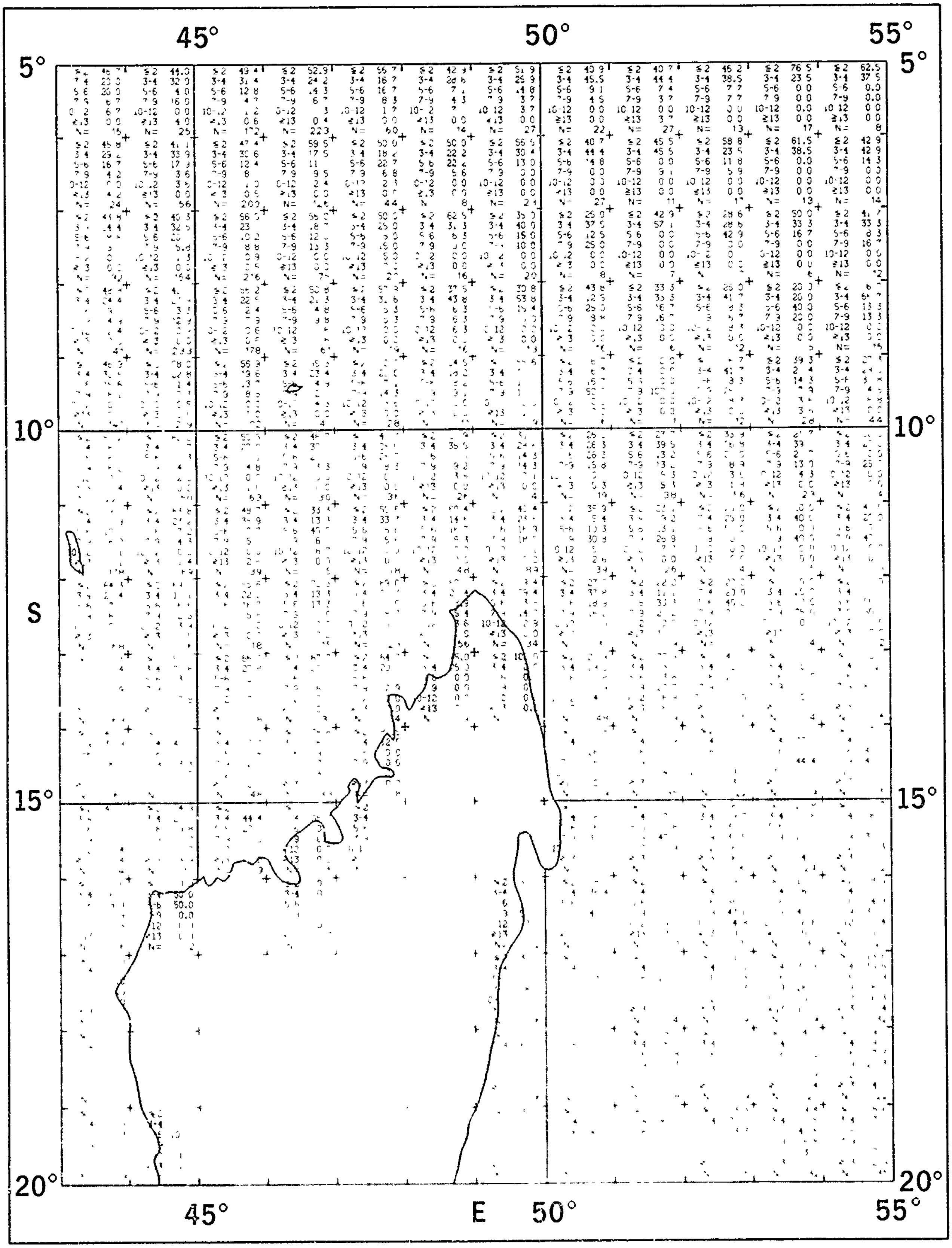


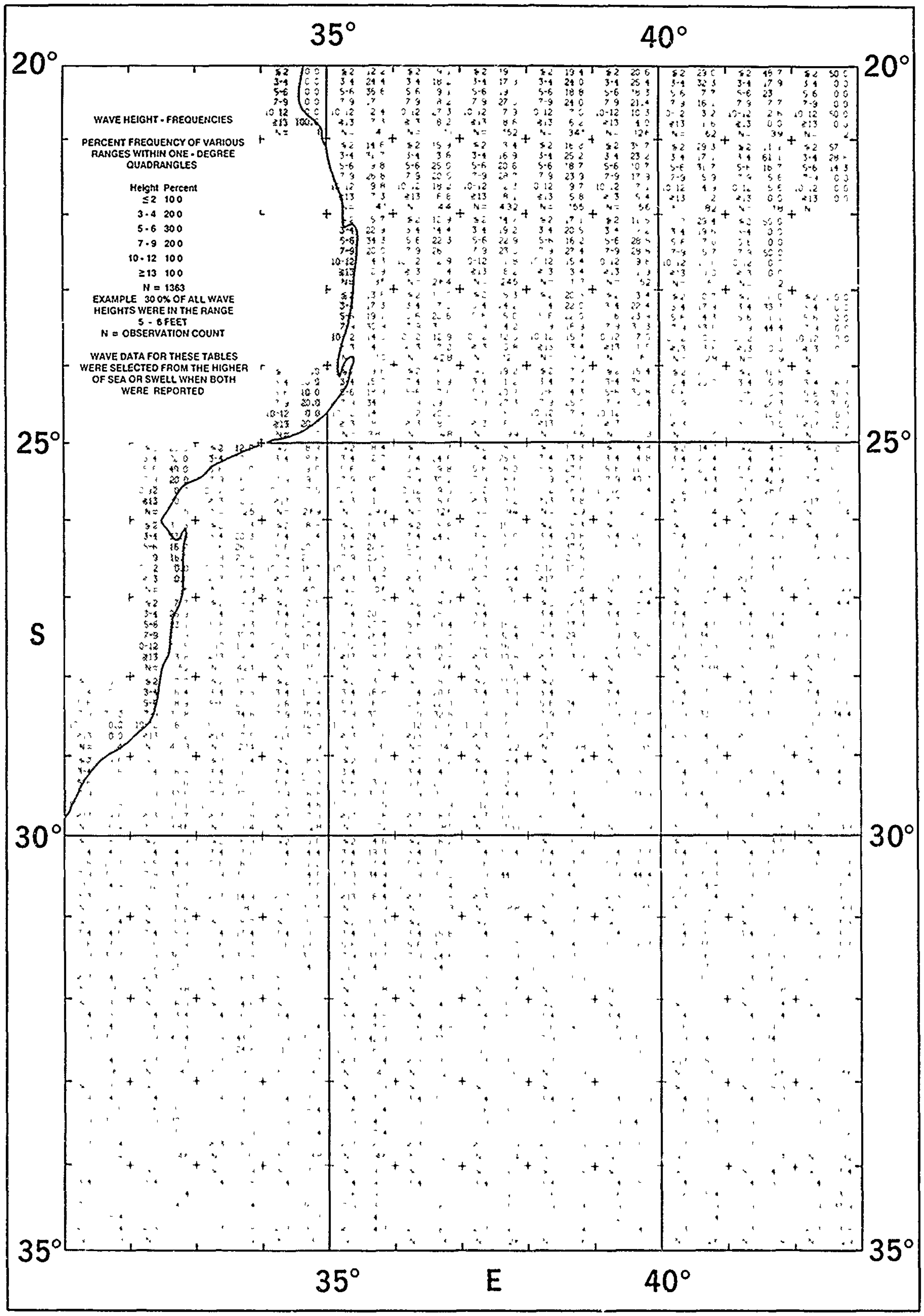


35°
40°
5°
10°
15°
20°
S
E
WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
Height Percent
≤2 10.0
3-4 20.0
5-6 30.0
7-9 20.0
10-12 10.0
≥13 10.0
N = 1363
EXAMPLE 30.0% OF ALL WAVE HEIGHTS WERE IN THE RANGE 5 - 6 FEET
N = OBSERVATION COUNT
WAVE DATA FOR THESE TABLES WERE SELECTED FROM THE HIGHER OF SEA OR SWELL WHEN BOTH WERE REPORTED

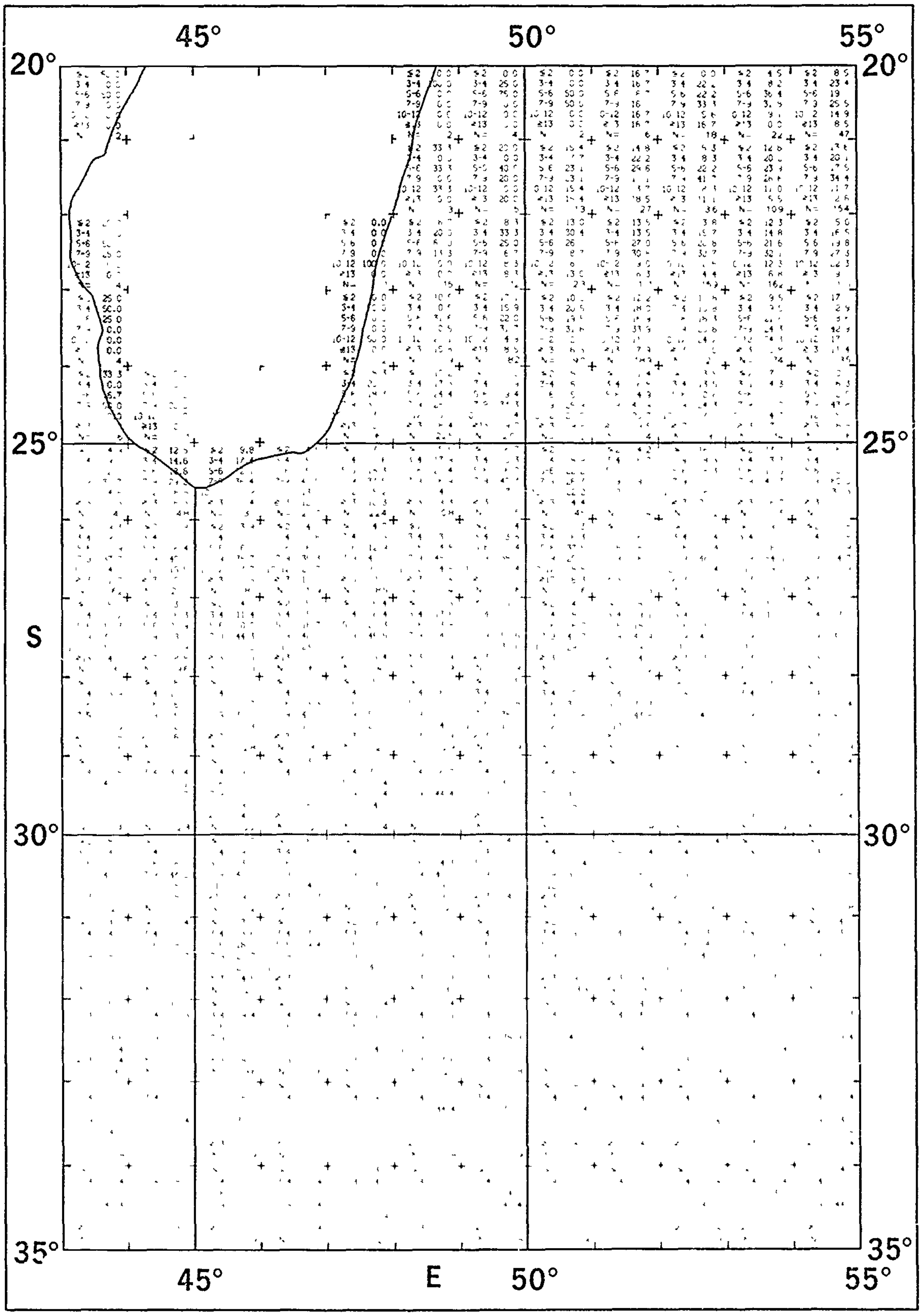
March

Wave Height



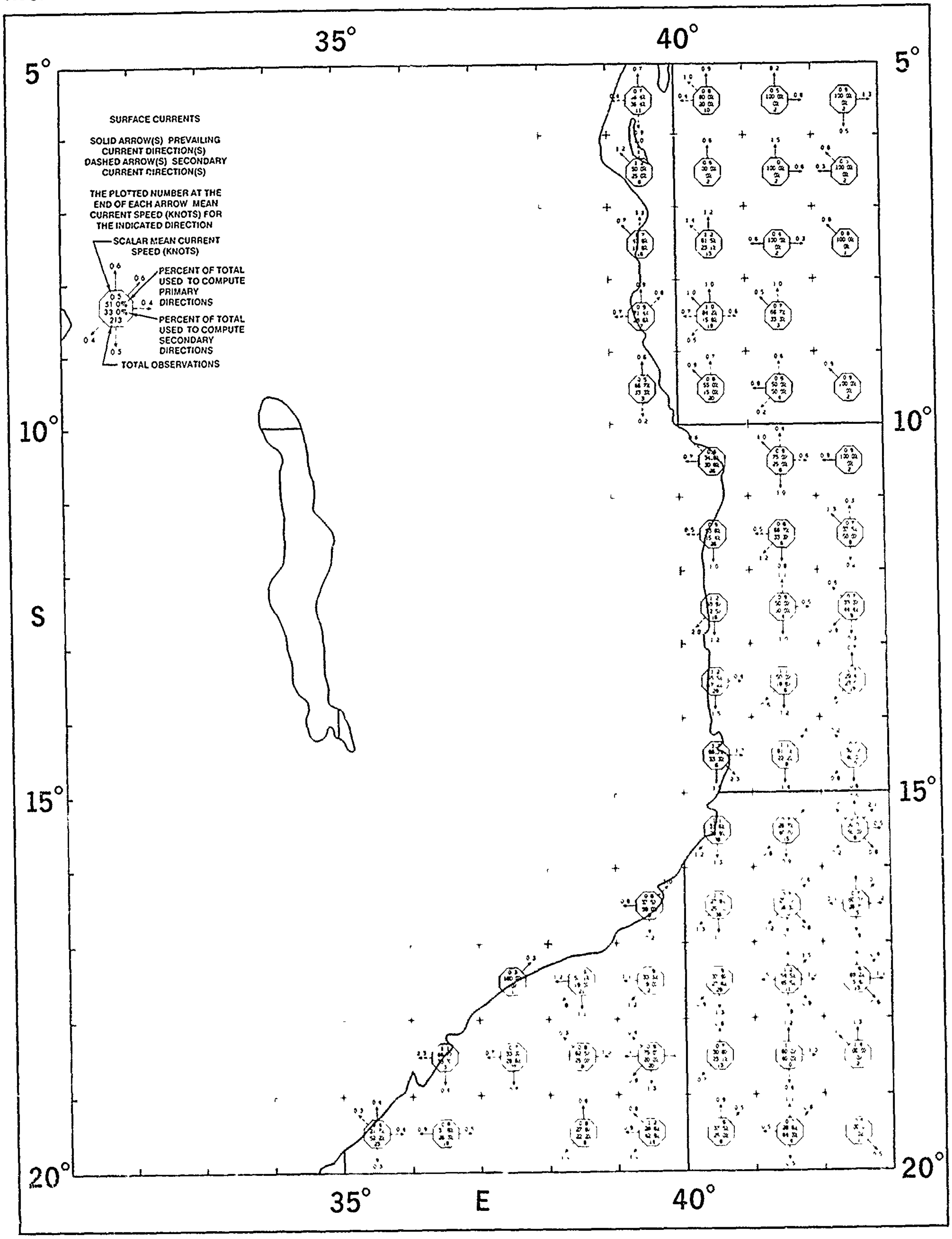

WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
Height Percent
≤2 10.0
3-4 20.0
5-6 30.0
7-9 20.0
10-12 10.0
≥13 10.0
N = 1363
EXAMPLE 30.0% OF ALL WAVE HEIGHTS WERE IN THE RANGE 5 - 6 FEET
N = OBSERVATION COUNT
WAVE DATA FOR THESE TABLES WERE SELECTED FROM THE HIGHER OF SEA OR SWELL WHEN BOTH WERE REPORTED
35°
40°
20°
25°
30°
35°
S
E

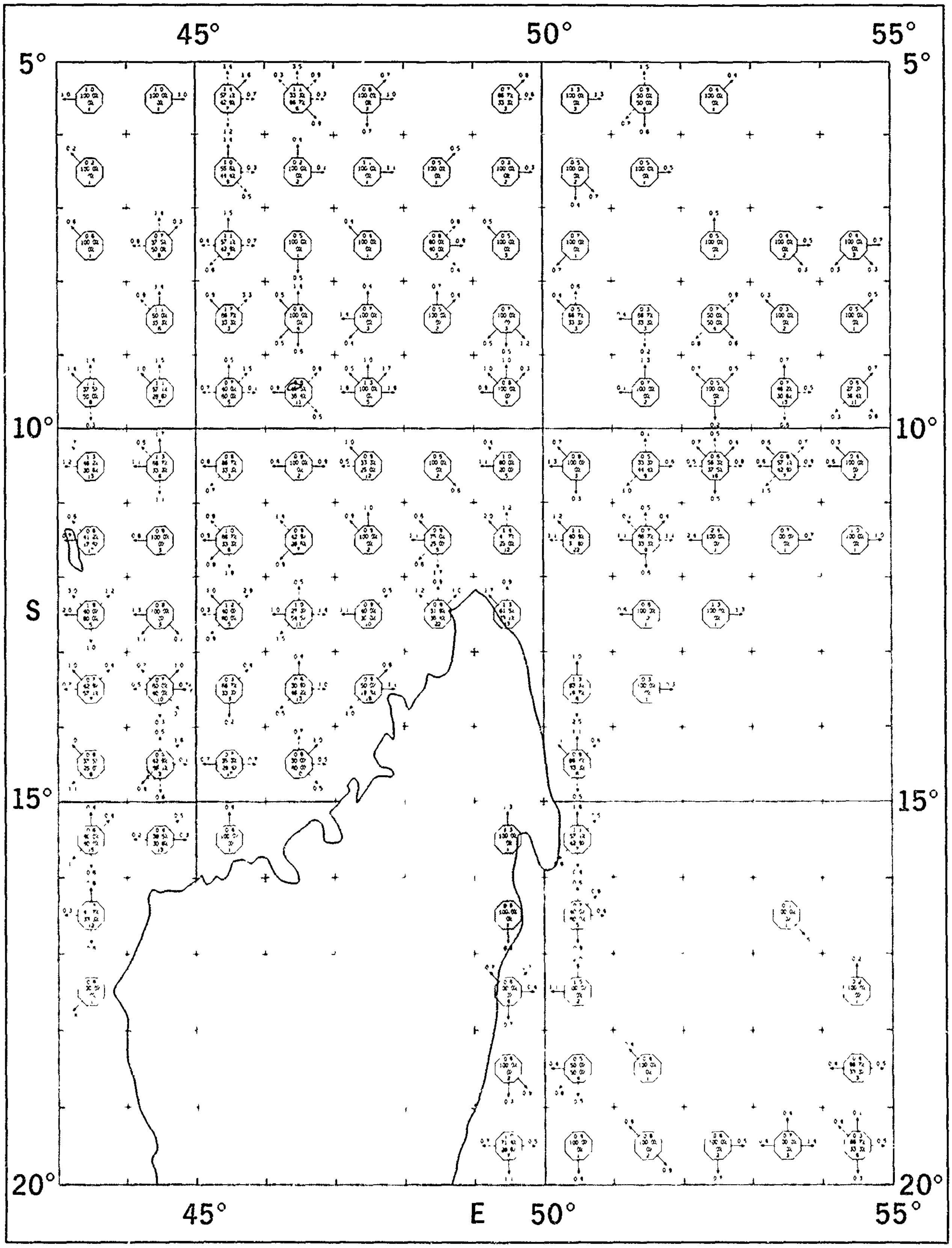
March **Wave Height**



March

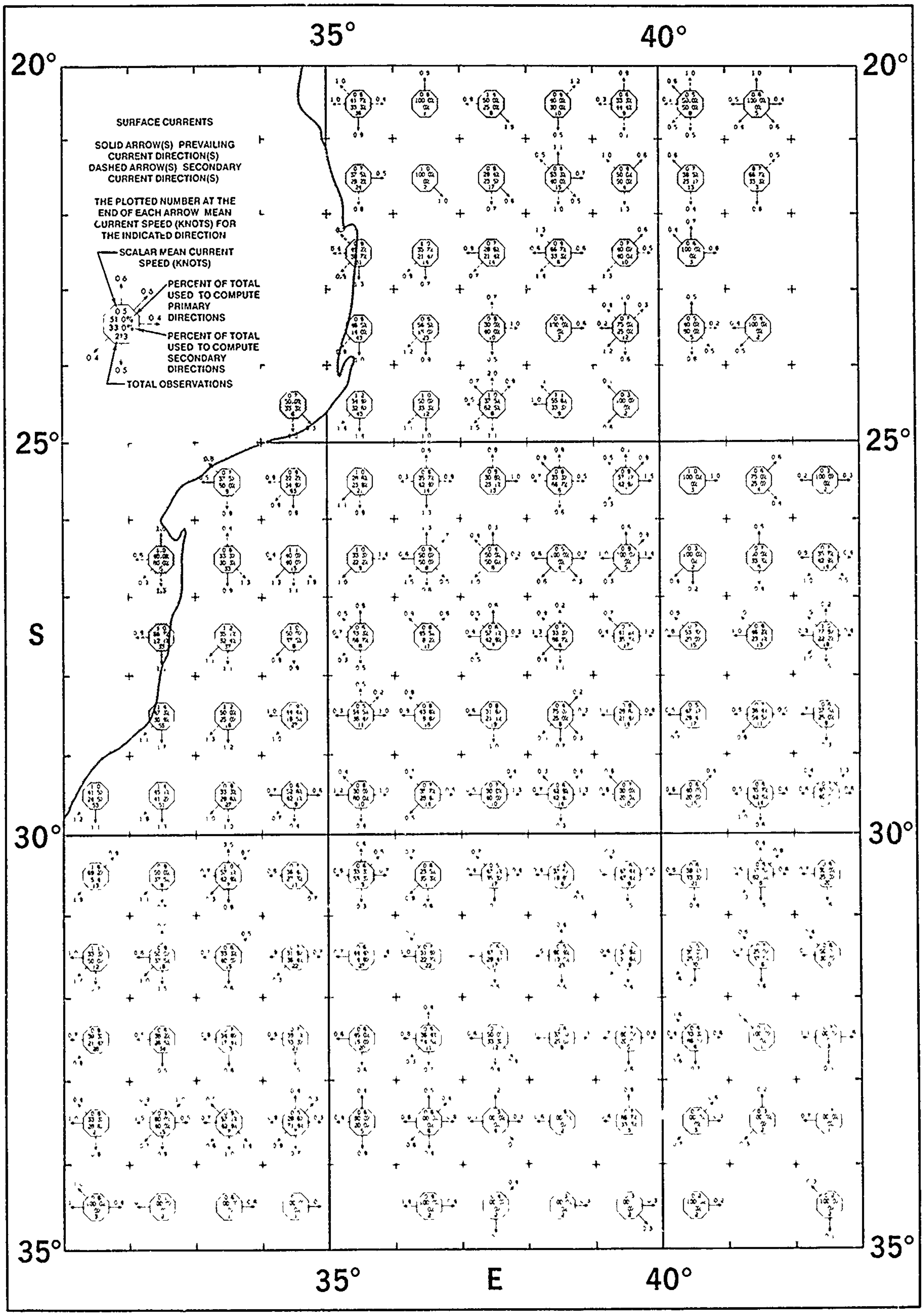
Surface Currents

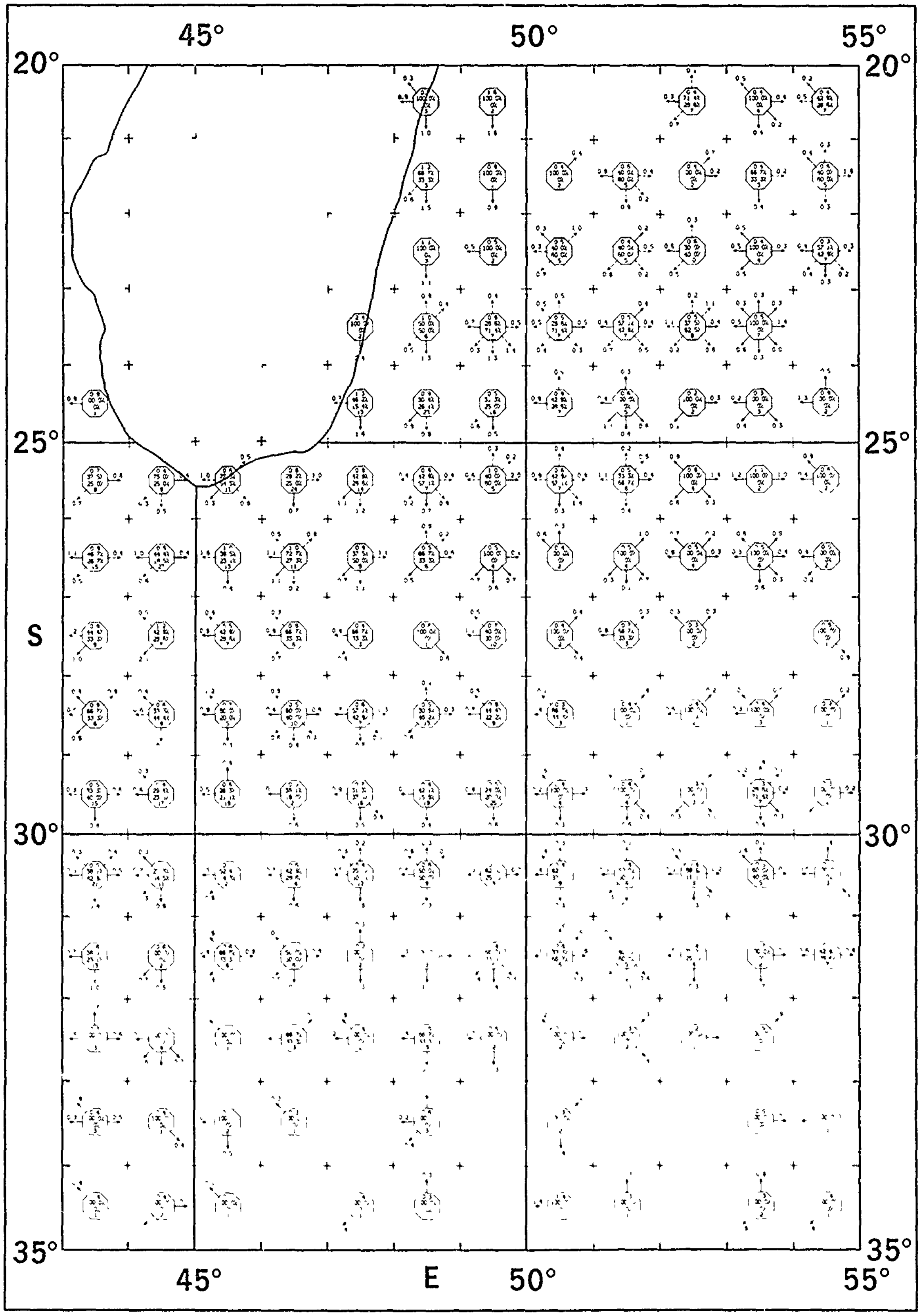


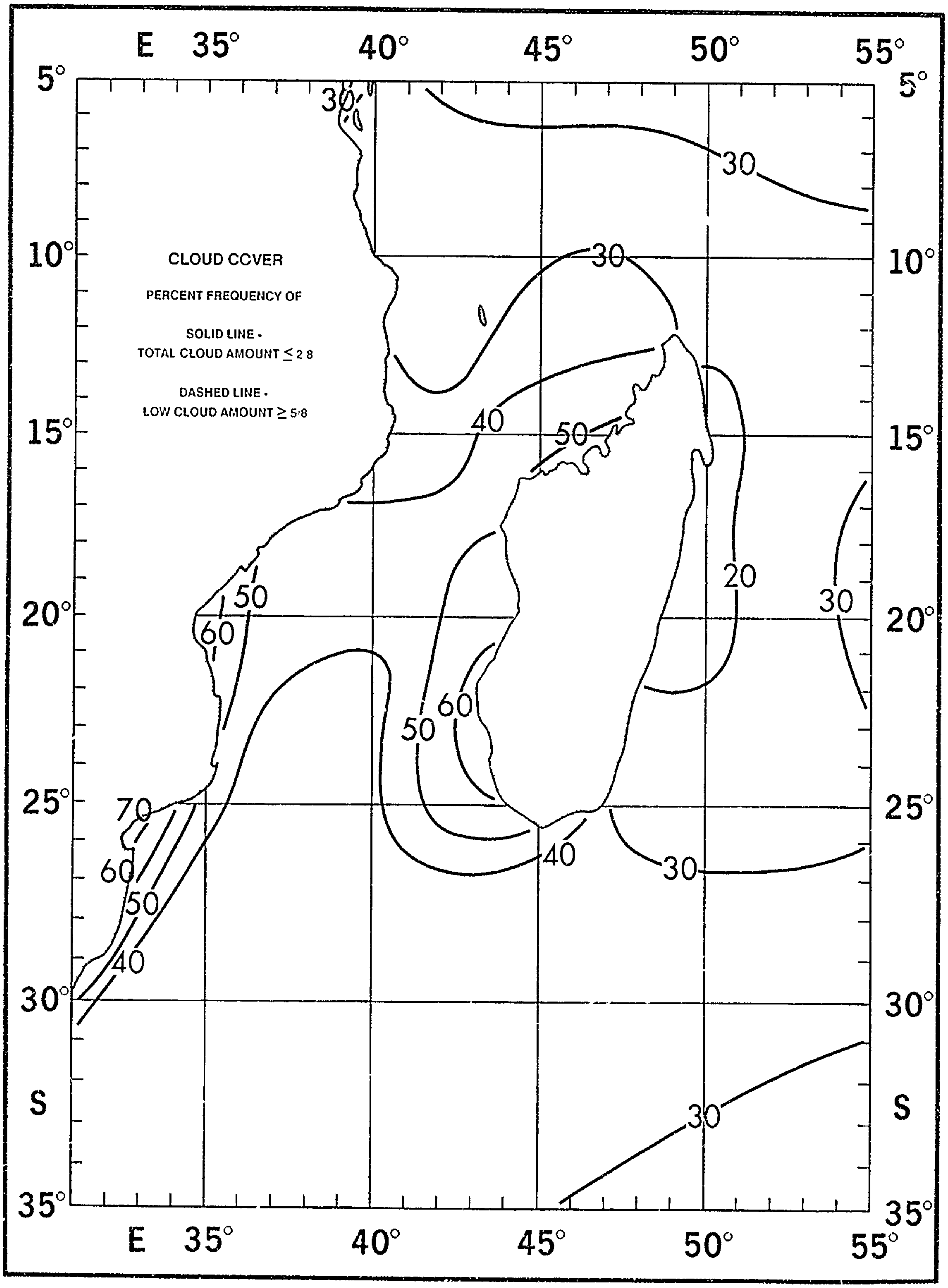

45°
50°
55°
5°
10°
15°
20°
S
E

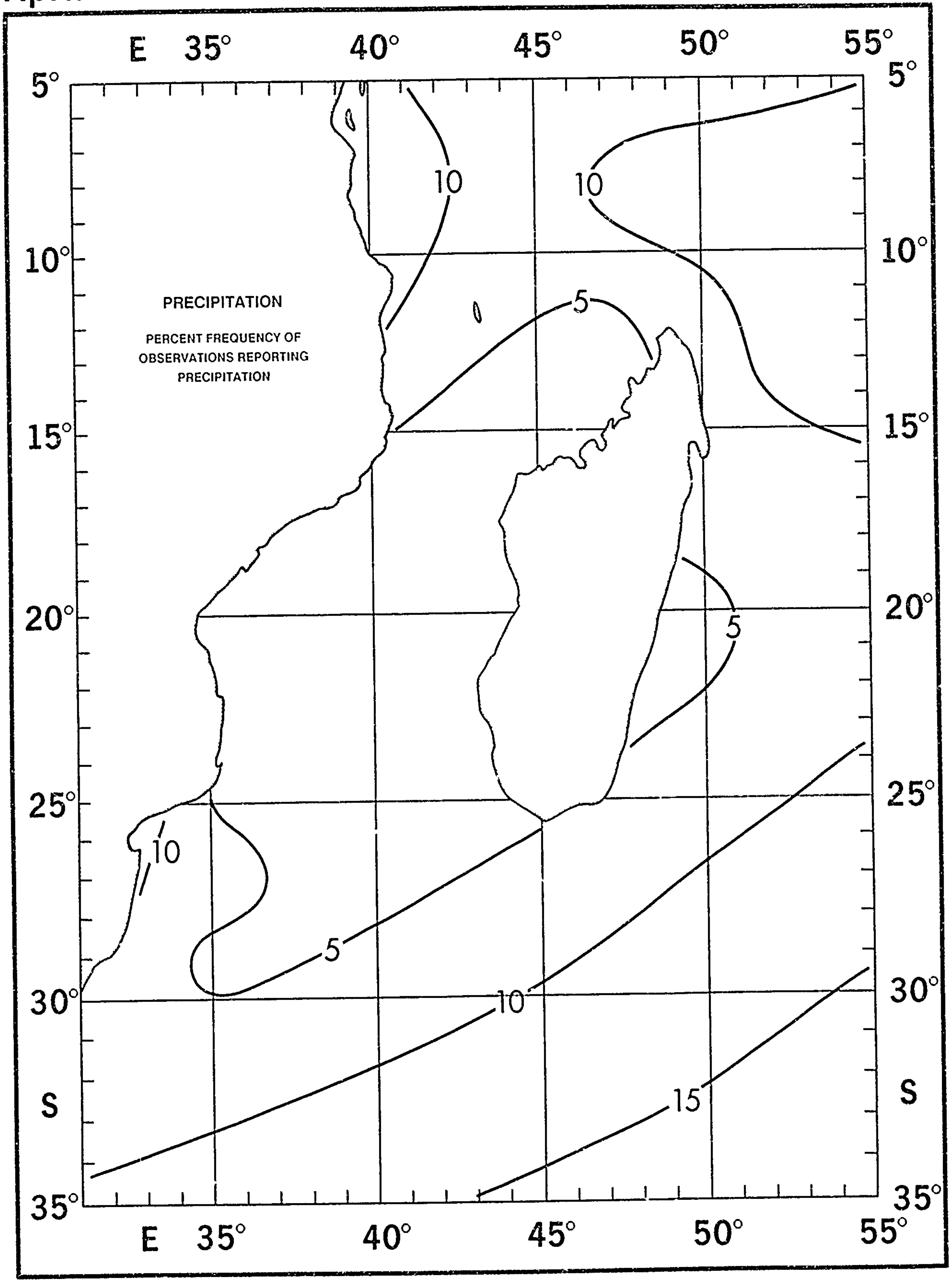
March

Surface Currents



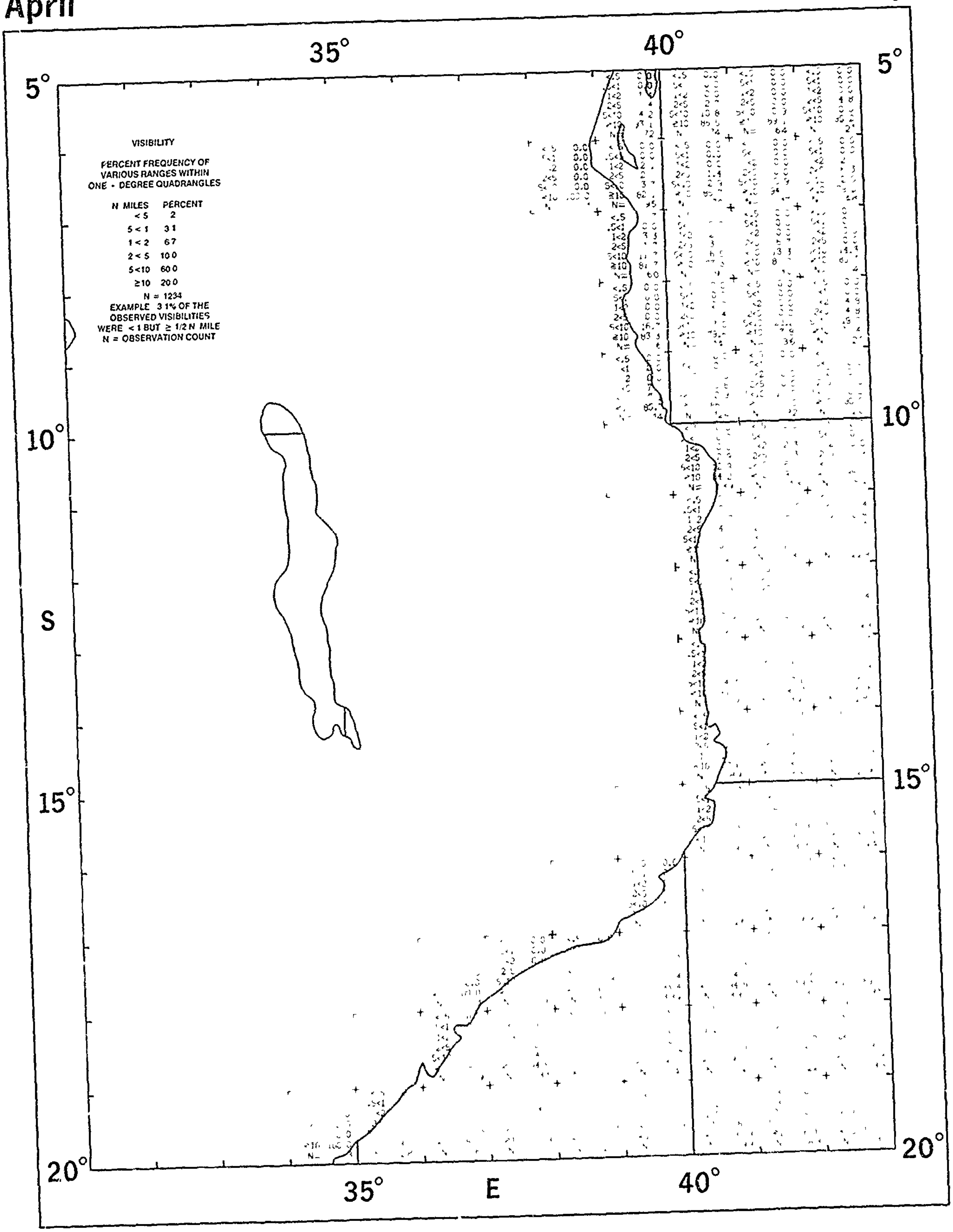

45°
50°
55°
20°
25°
30°
35°
S
E


CLOUD COVER
PERCENT FREQUENCY OF
SOLID LINE -
TOTAL CLOUD AMOUNT ≤ 2/8
DASHED LINE -
LOW CLOUD AMOUNT ≥ 5/8
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° 35°
S
30 40 50 60 70 20

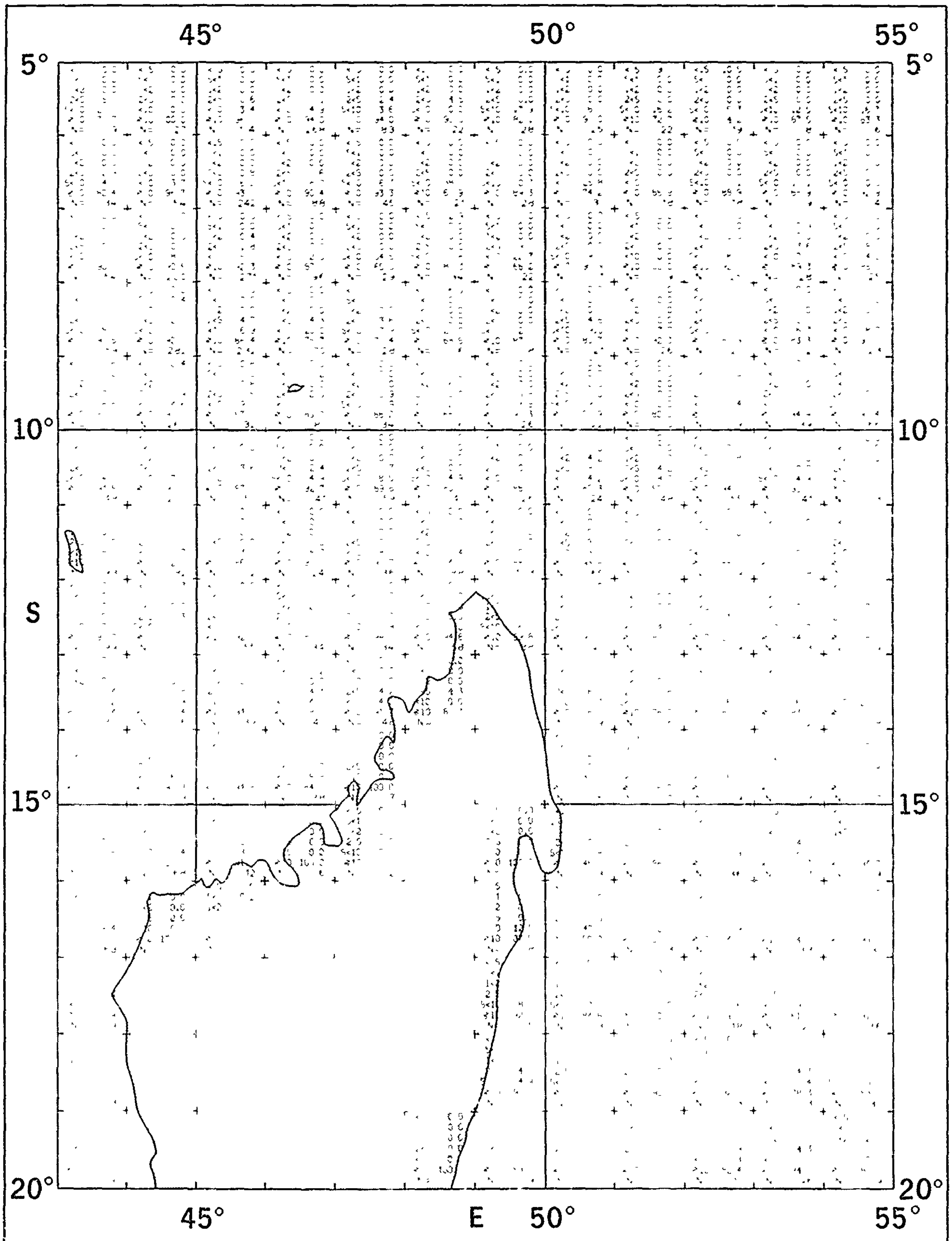

E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
PRECIPITATION
PERCENT FREQUENCY OF OBSERVATIONS REPORTING PRECIPITATION
10
10
5
5
10
5
10
15

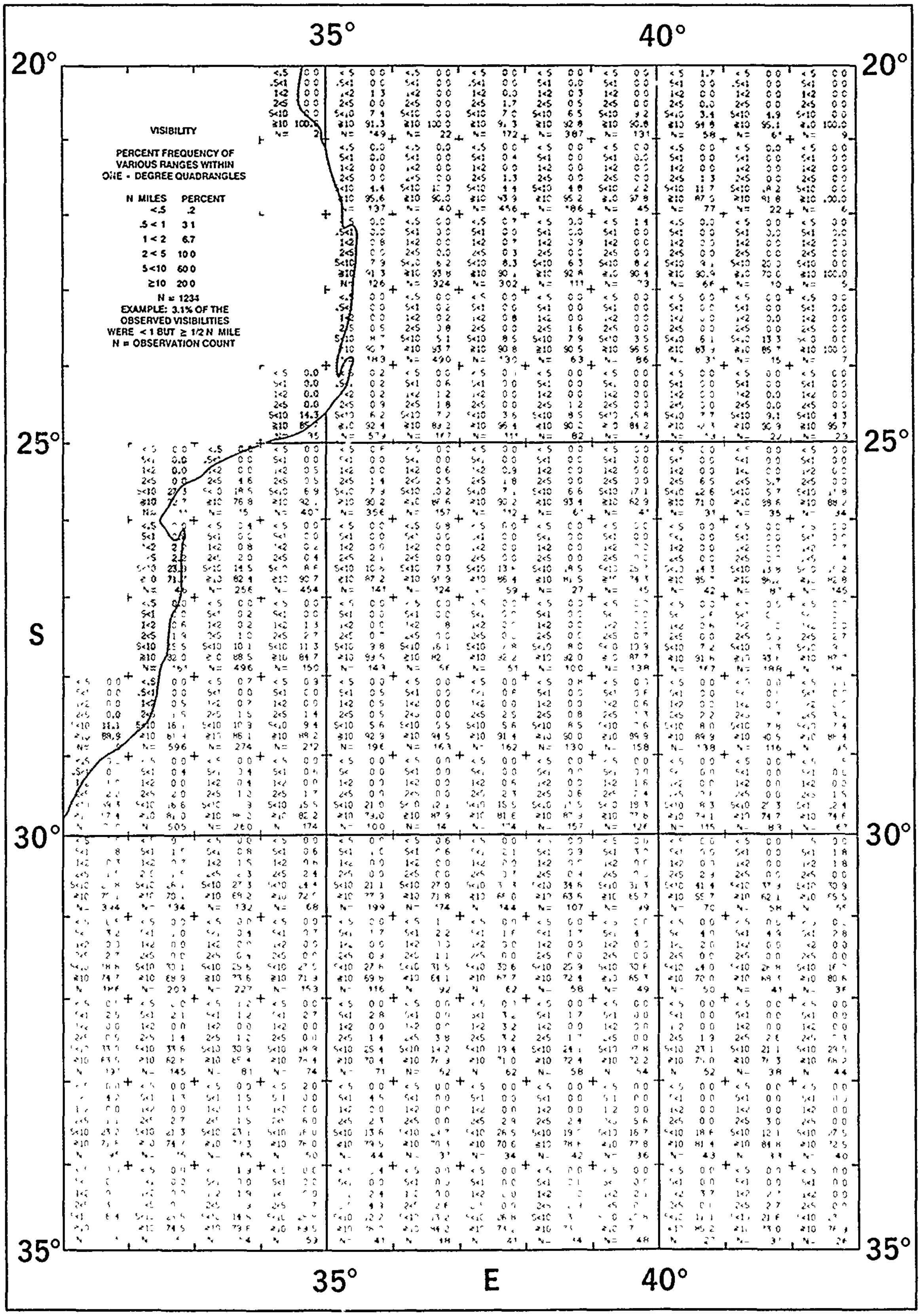
April

Visibility

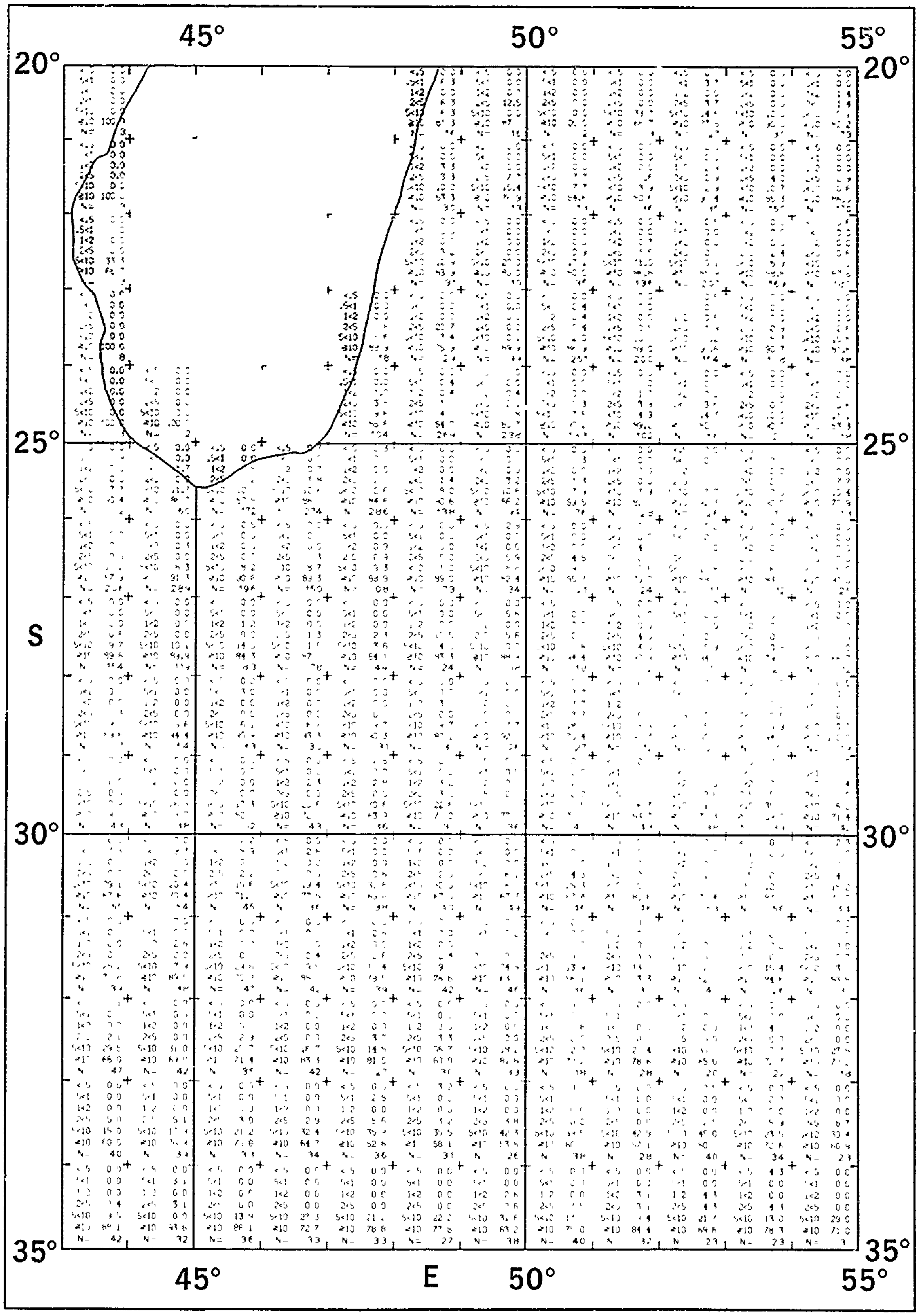


April Visibility

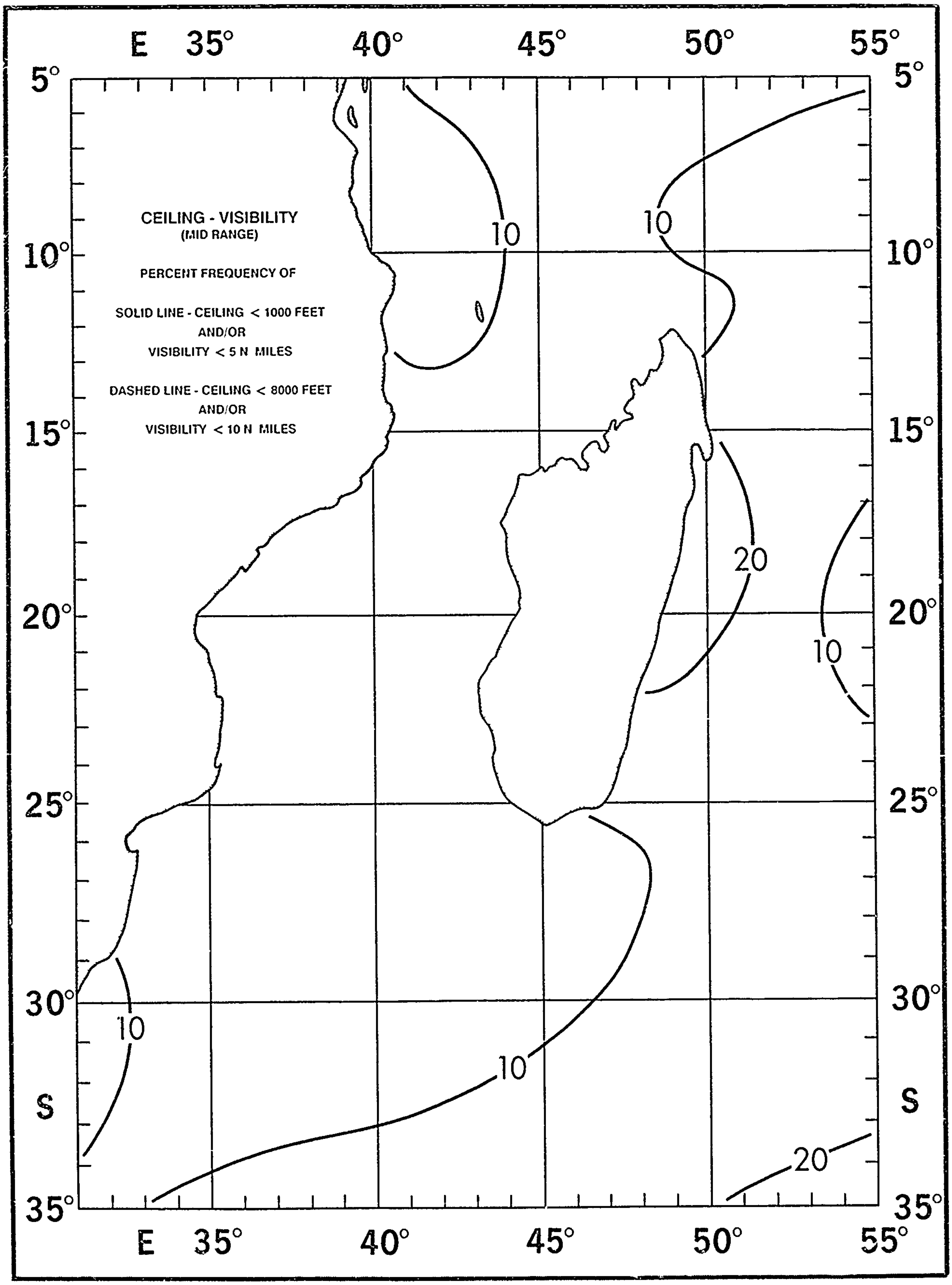


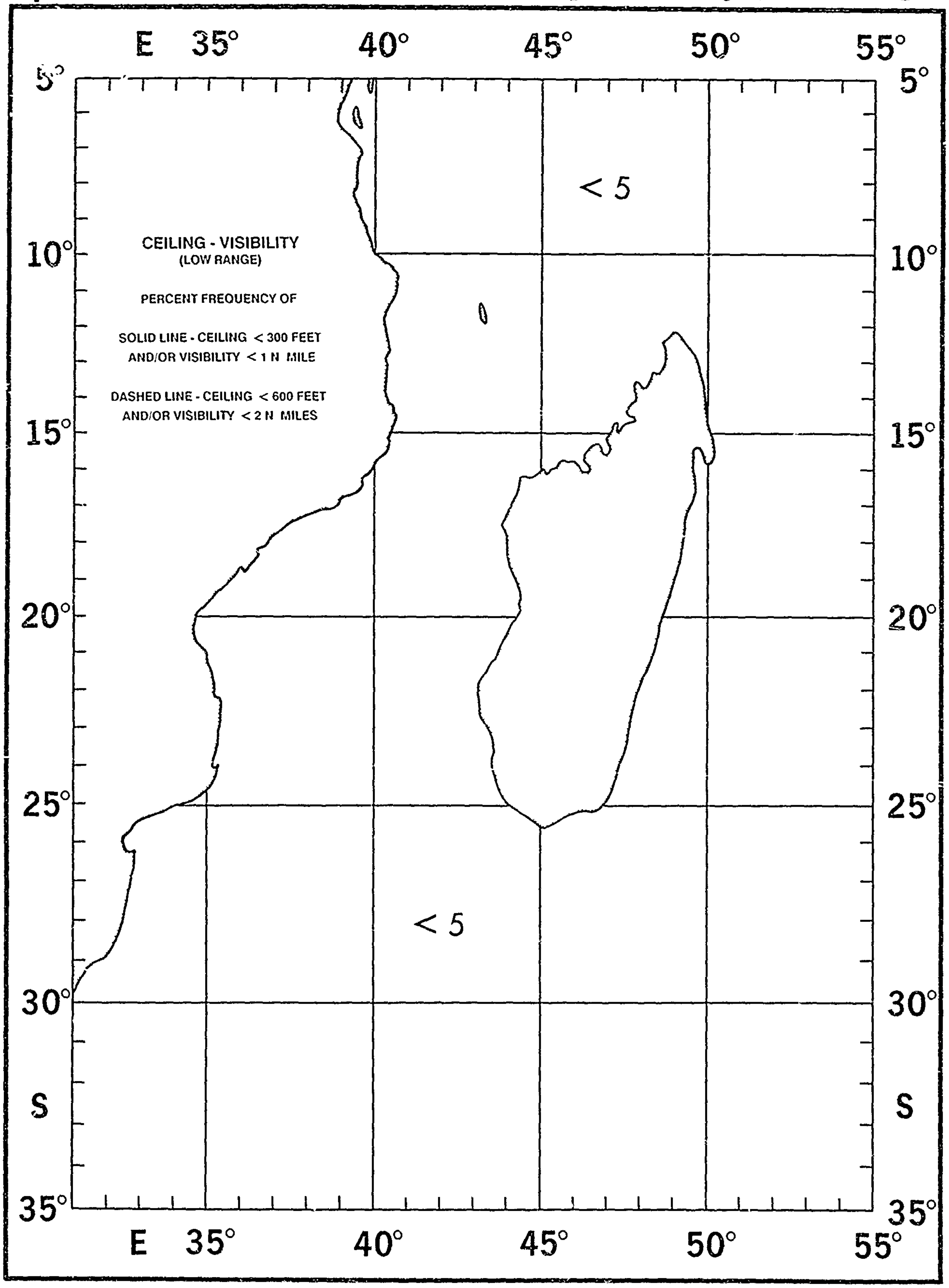

35°
40°
20°
25°
30°
35°
S
E
VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
<.5 .2
.5<1 3.1
1<2 6.7
2<5 10.0
5<10 60.0
≥10 20.0
N = 1234
EXAMPLE: 3.1% OF THE OBSERVED VISIBILITIES WERE < 1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT

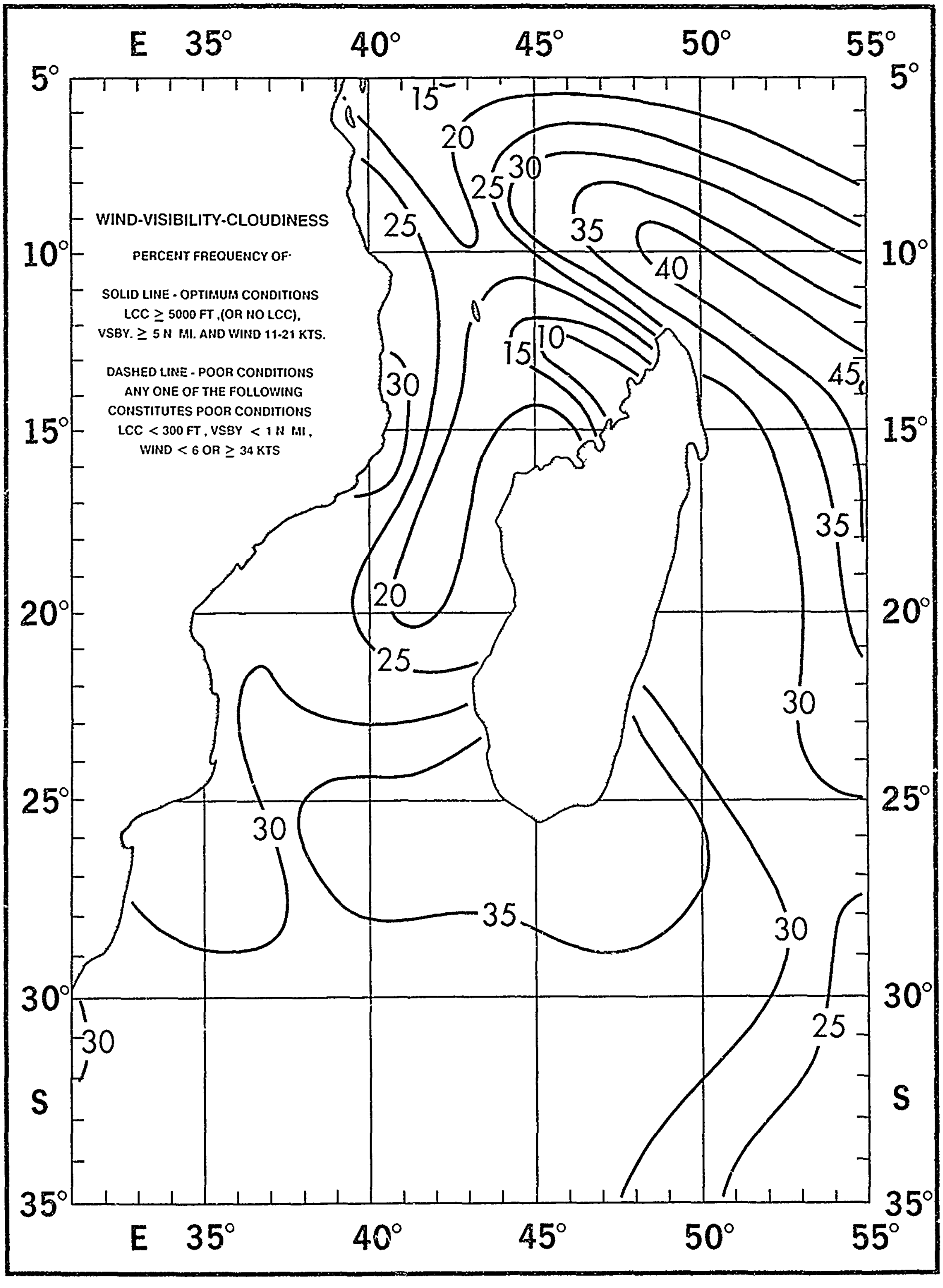
April Visibility



April — Ceiling - Visibility (Mid Range)

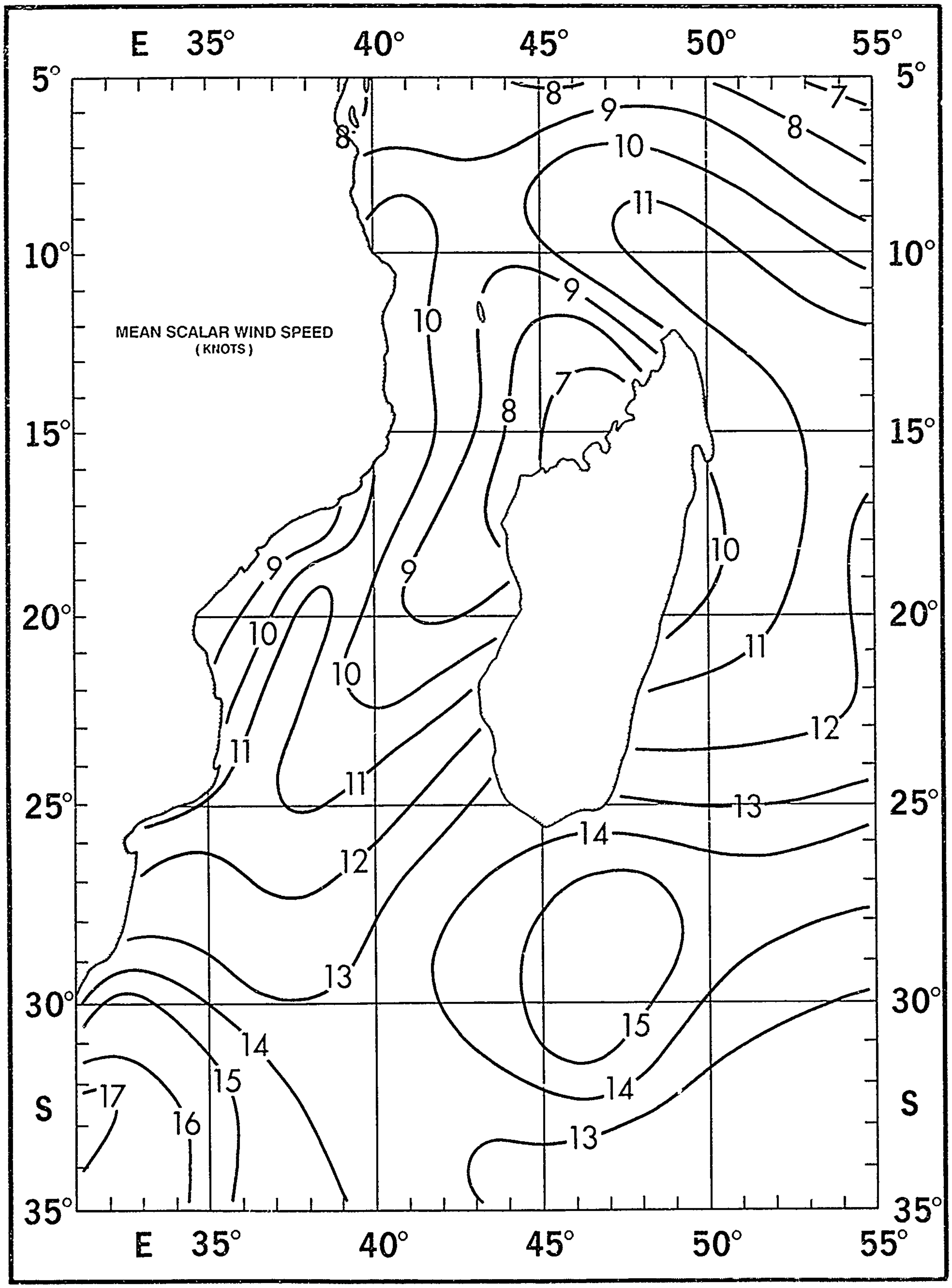



E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
35°
S
CEILING - VISIBILITY
(LOW RANGE)
PERCENT FREQUENCY OF
SOLID LINE - CEILING < 300 FEET
AND/OR VISIBILITY < 1 N MILE
DASHED LINE - CEILING < 600 FEET
AND/OR VISIBILITY < 2 N MILES
< 5
< 5


E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° 35°
S
WIND-VISIBILITY-CLOUDINESS
PERCENT FREQUENCY OF
SOLID LINE - OPTIMUM CONDITIONS
LCC ≥ 5000 FT ,(OR NO LCC),
VSBY. ≥ 5 N MI. AND WIND 11-21 KTS.
DASHED LINE - POOR CONDITIONS
ANY ONE OF THE FOLLOWING
CONSTITUTES POOR CONDITIONS
LCC < 300 FT , VSBY < 1 N MI ,
WIND < 6 OR ≥ 34 KTS
15
20
25
30
35
40
45
10
15
30
20
25
30
35
30
35
30
25
30

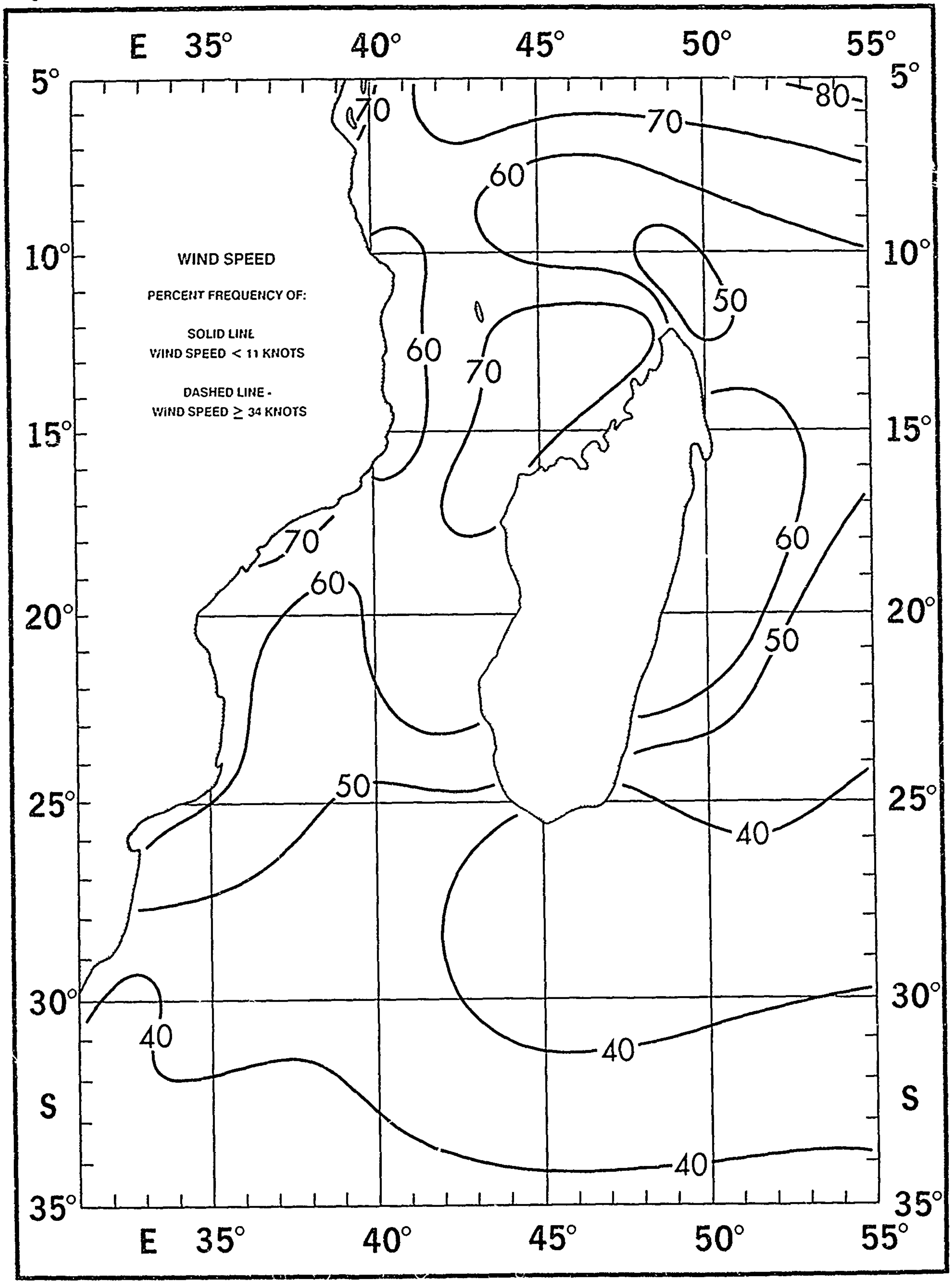
April

Mean Scalar Wind Speed

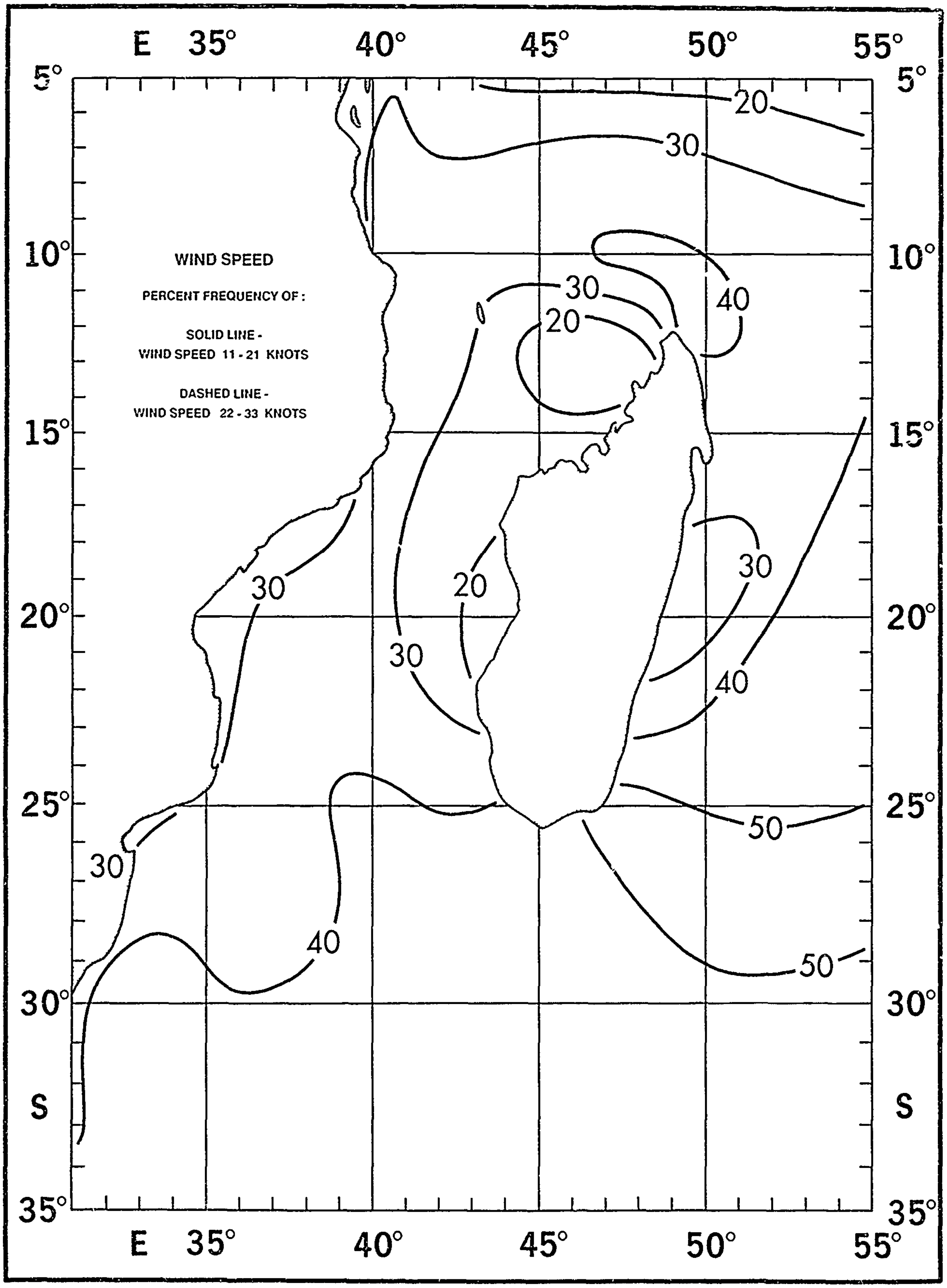


April

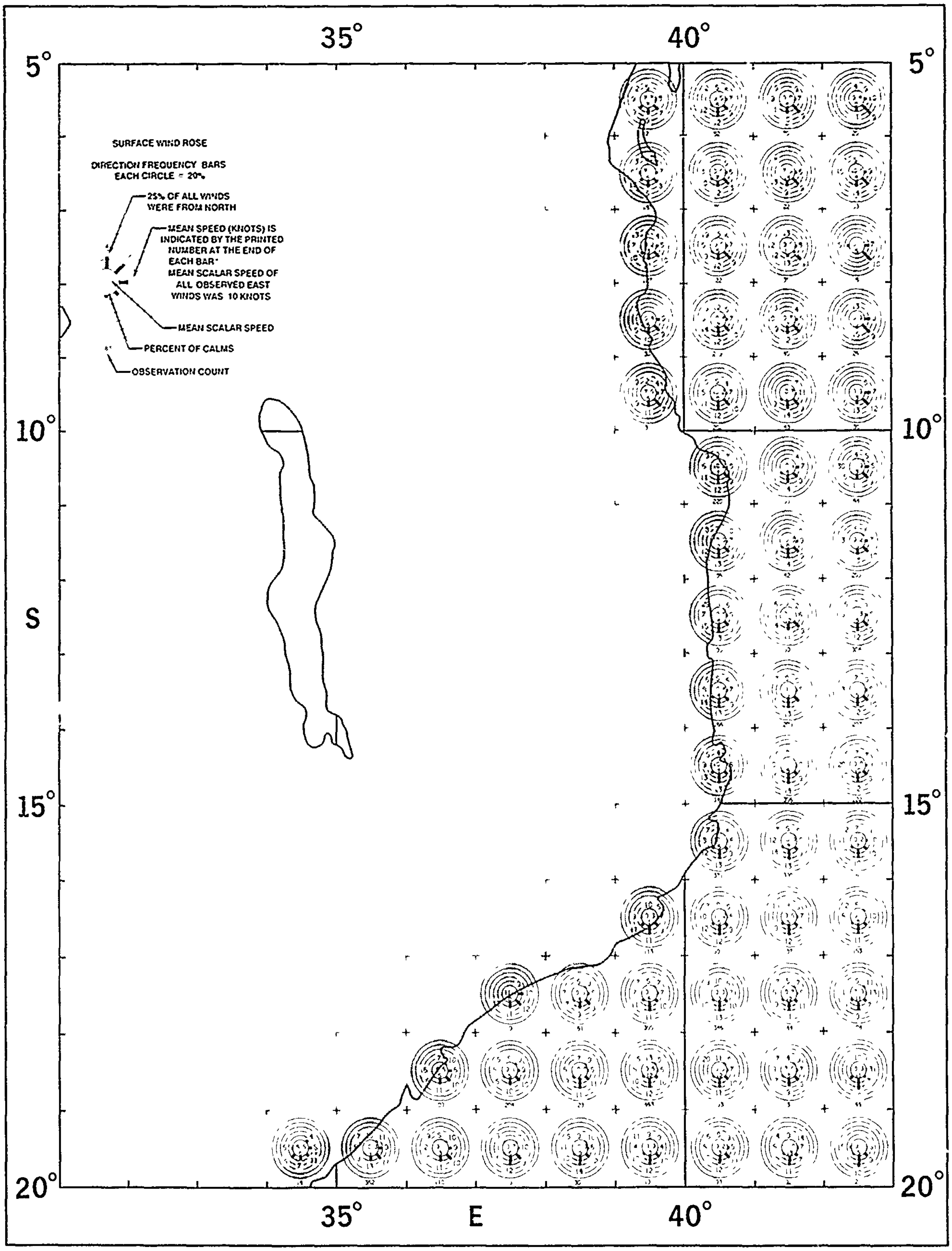
Wind Speed <11 and ≥34 Knots

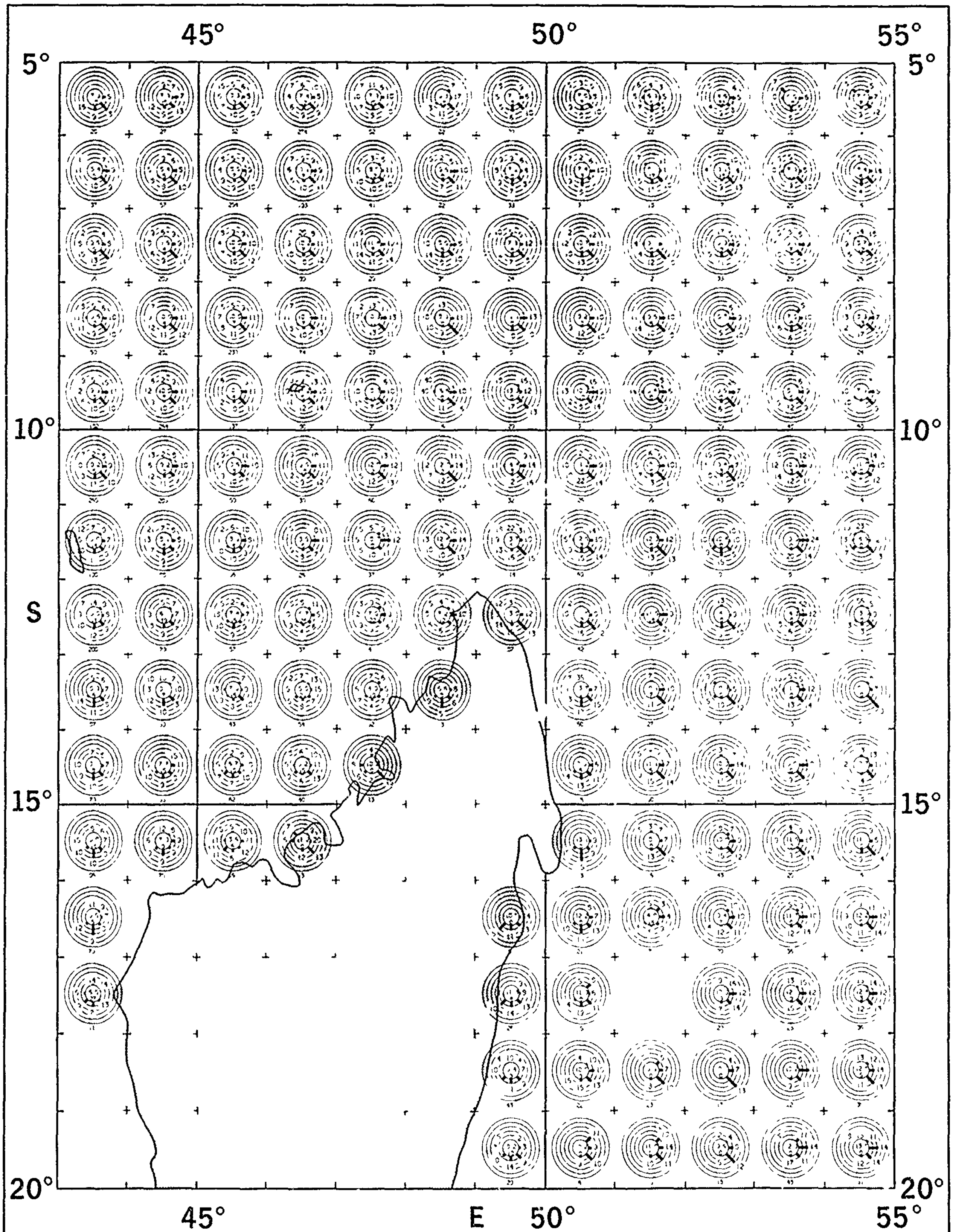


April — Wind Speed 11 - 21 and 22 - 33 Knots

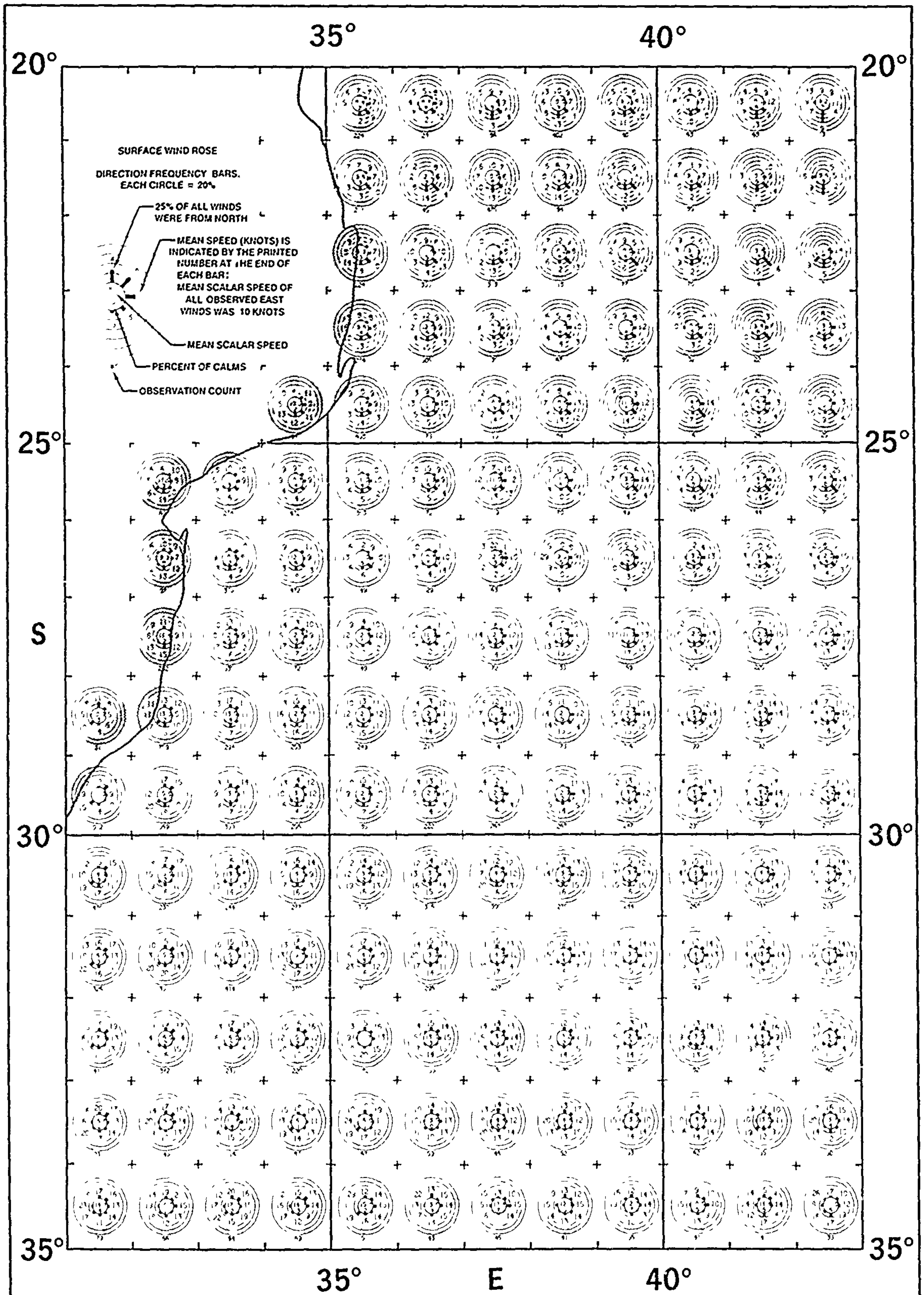


Surface Wind Roses



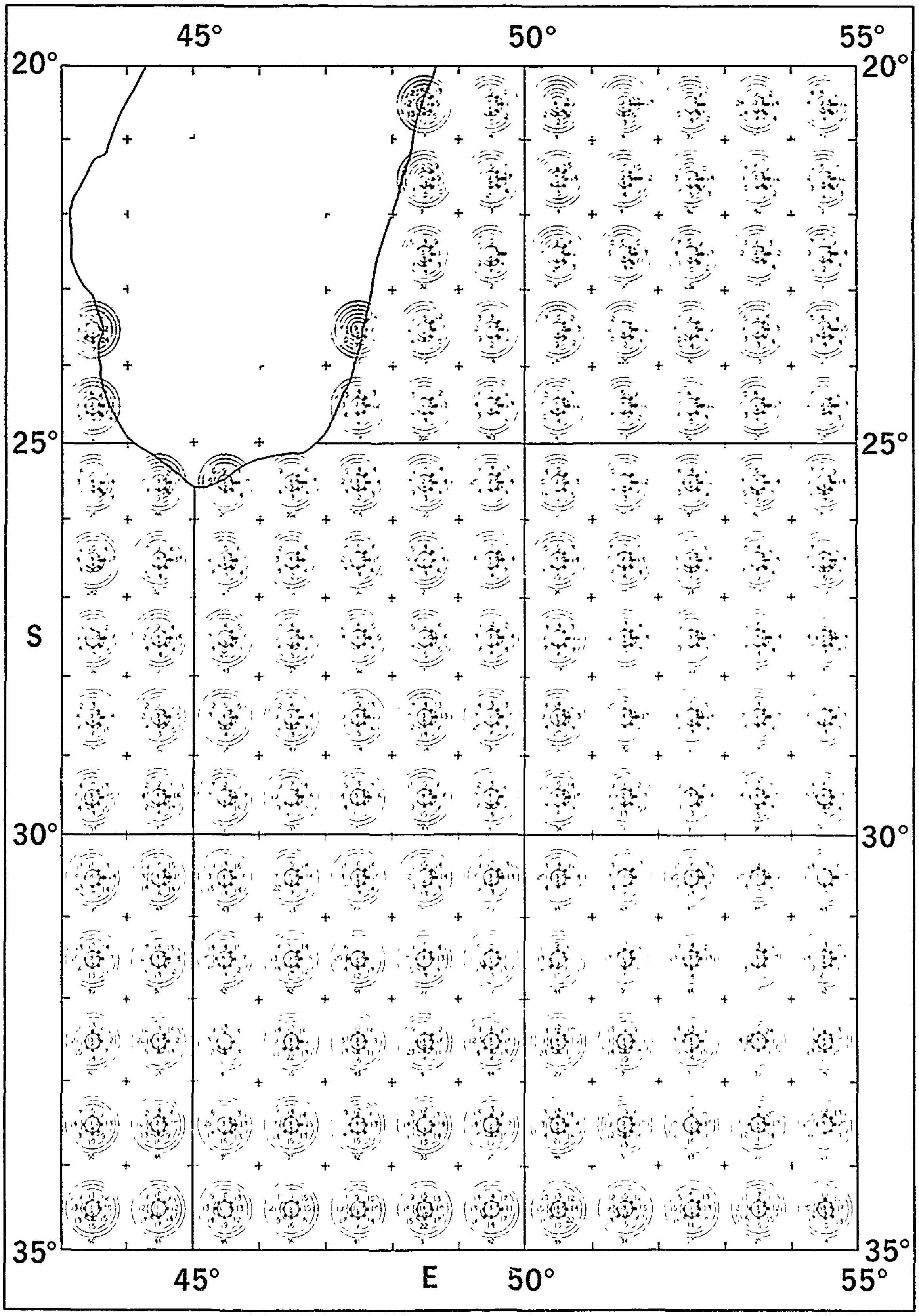

45°
50°
55°
5°
10°
15°
20°
S
E

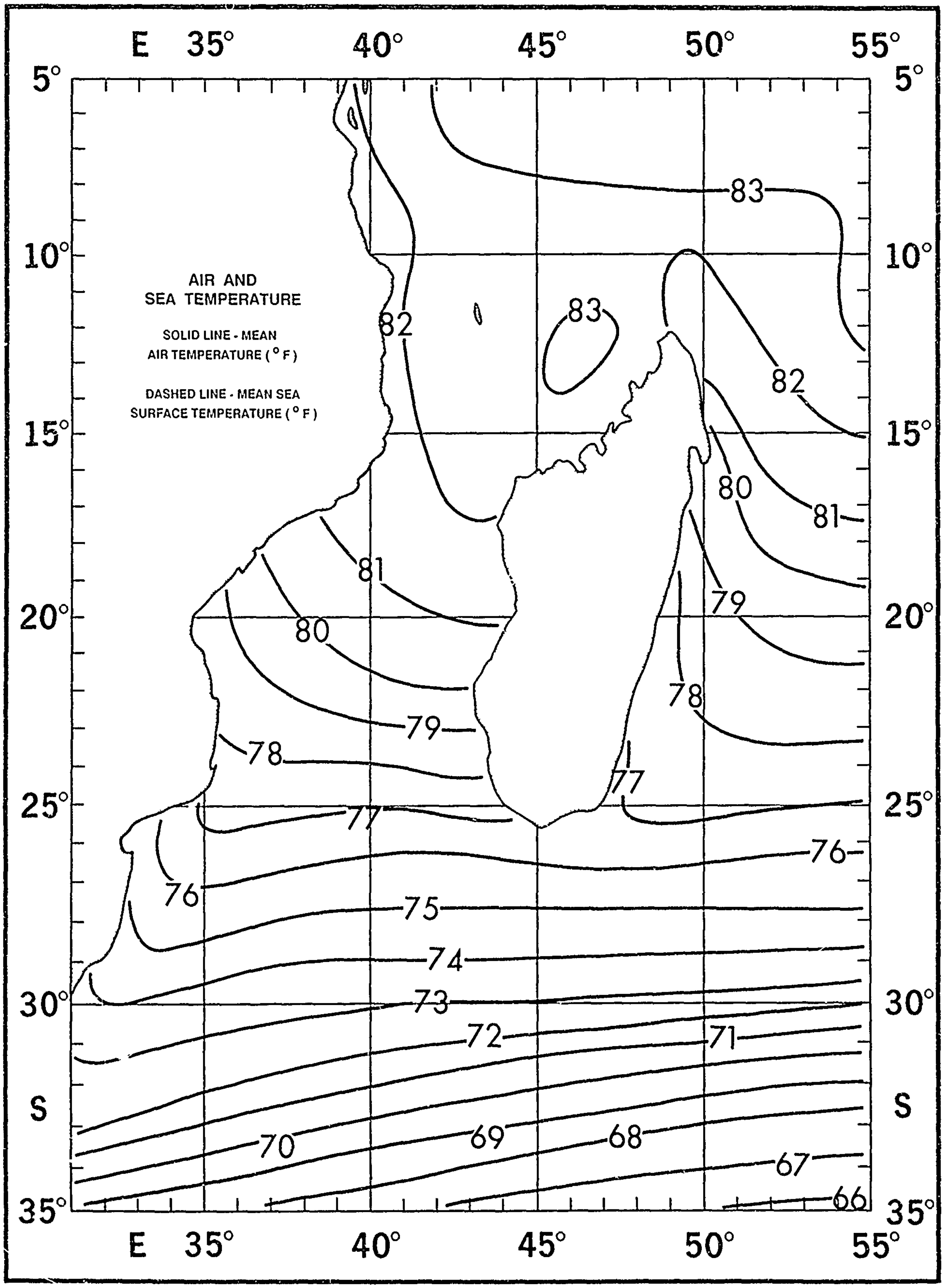
April — Surface Wind Roses

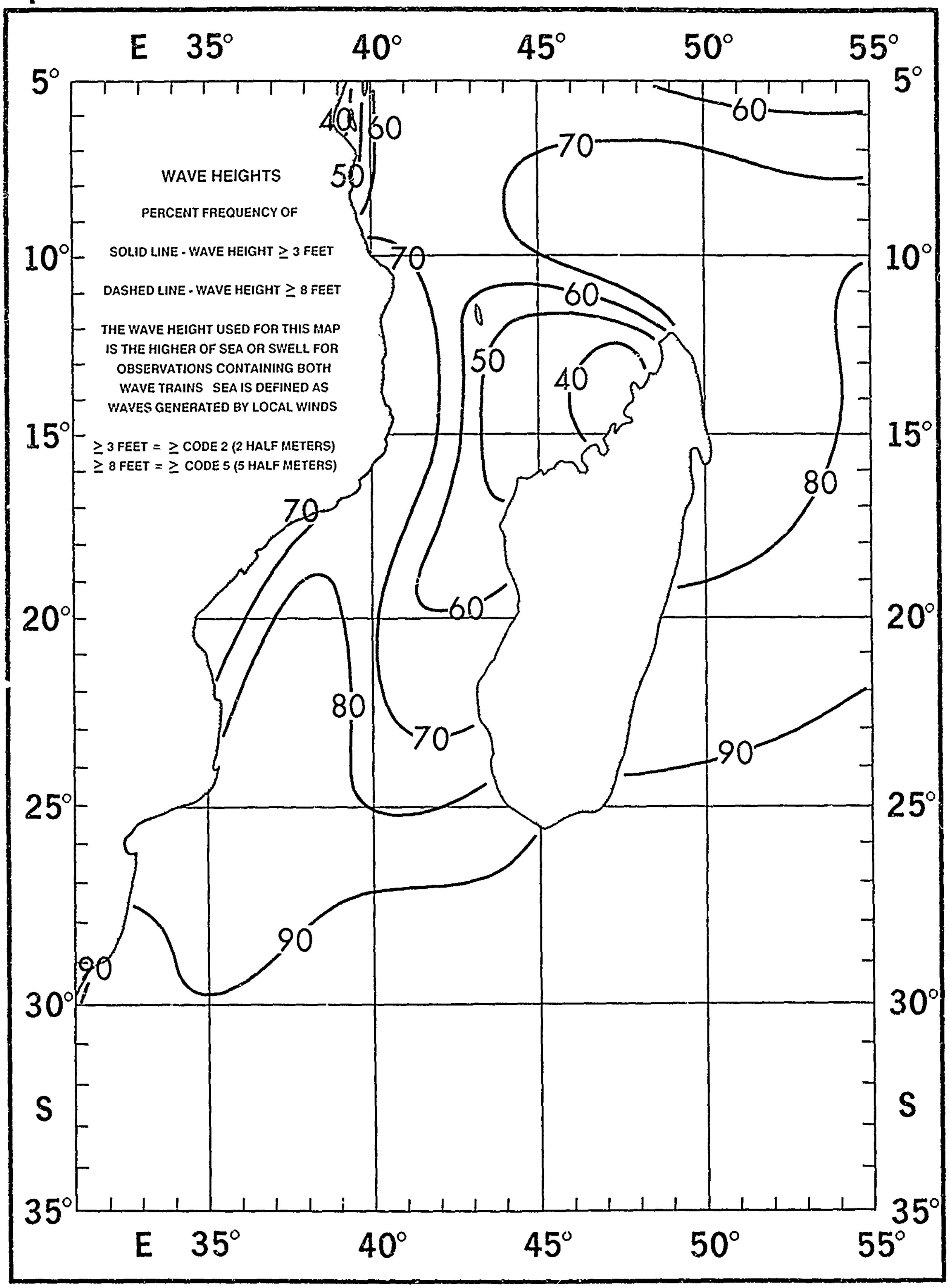


April

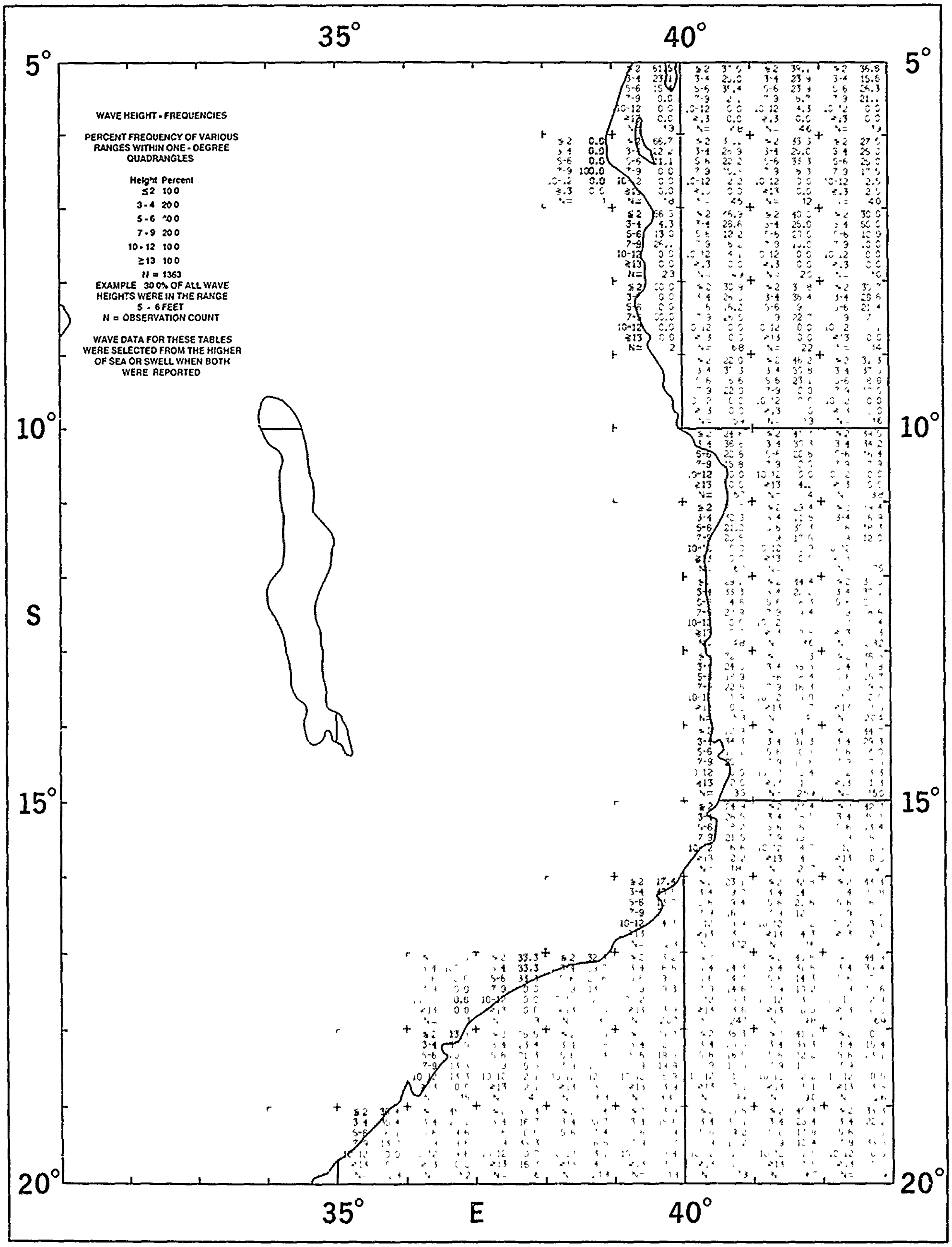
Surface Wind Roses



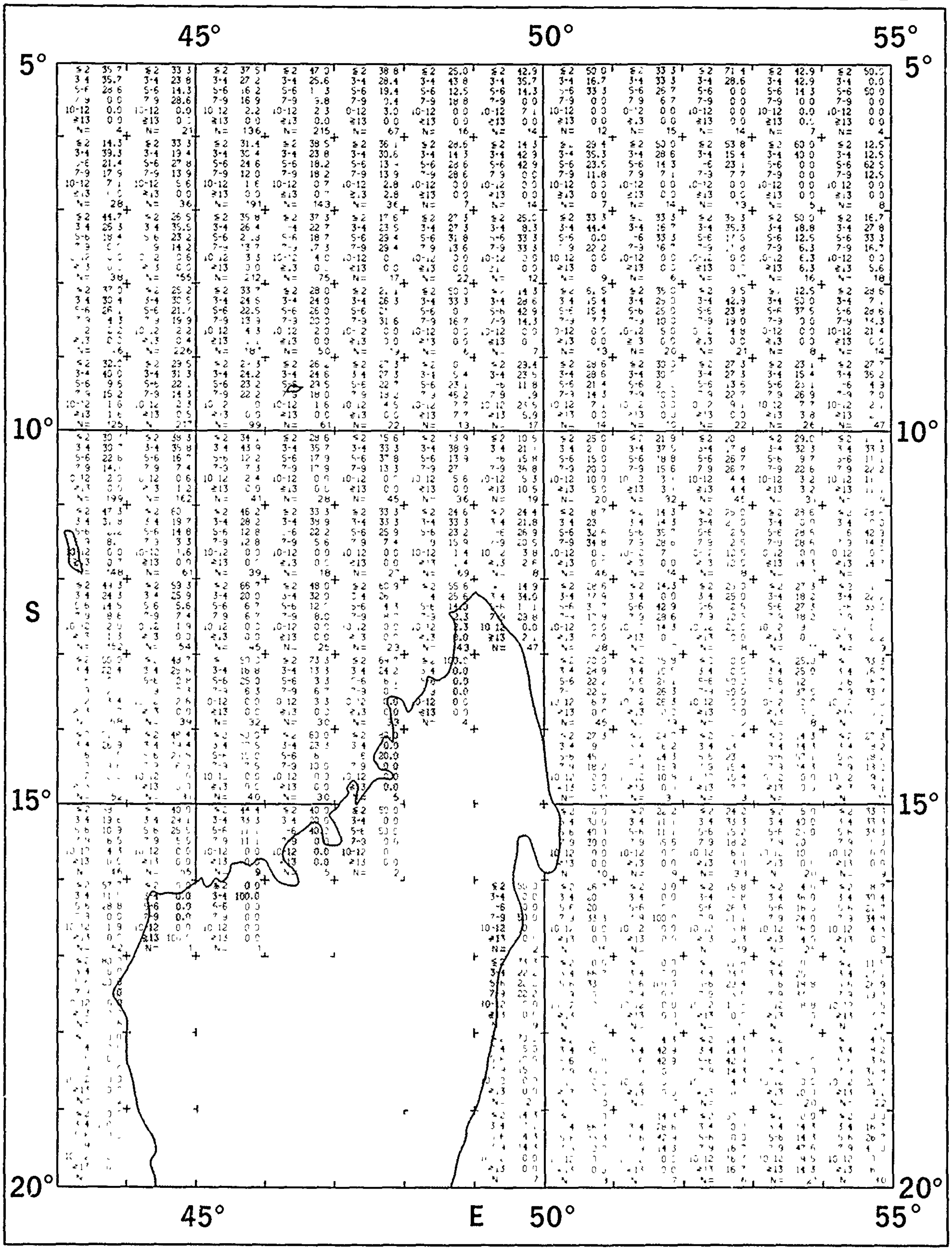

E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
AIR AND
SEA TEMPERATURE
SOLID LINE - MEAN
AIR TEMPERATURE (° F)
DASHED LINE - MEAN SEA
SURFACE TEMPERATURE (° F)
83
82
81
80
79
78
77
76
75
74
73
72
71
70
69
68
67
66


E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
WAVE HEIGHTS
PERCENT FREQUENCY OF
SOLID LINE - WAVE HEIGHT ≥ 3 FEET
DASHED LINE - WAVE HEIGHT ≥ 8 FEET
THE WAVE HEIGHT USED FOR THIS MAP IS THE HIGHER OF SEA OR SWELL FOR OBSERVATIONS CONTAINING BOTH WAVE TRAINS SEA IS DEFINED AS WAVES GENERATED BY LOCAL WINDS
≥ 3 FEET = ≥ CODE 2 (2 HALF METERS)
≥ 8 FEET = ≥ CODE 5 (5 HALF METERS)
40
50
60
70
80
90

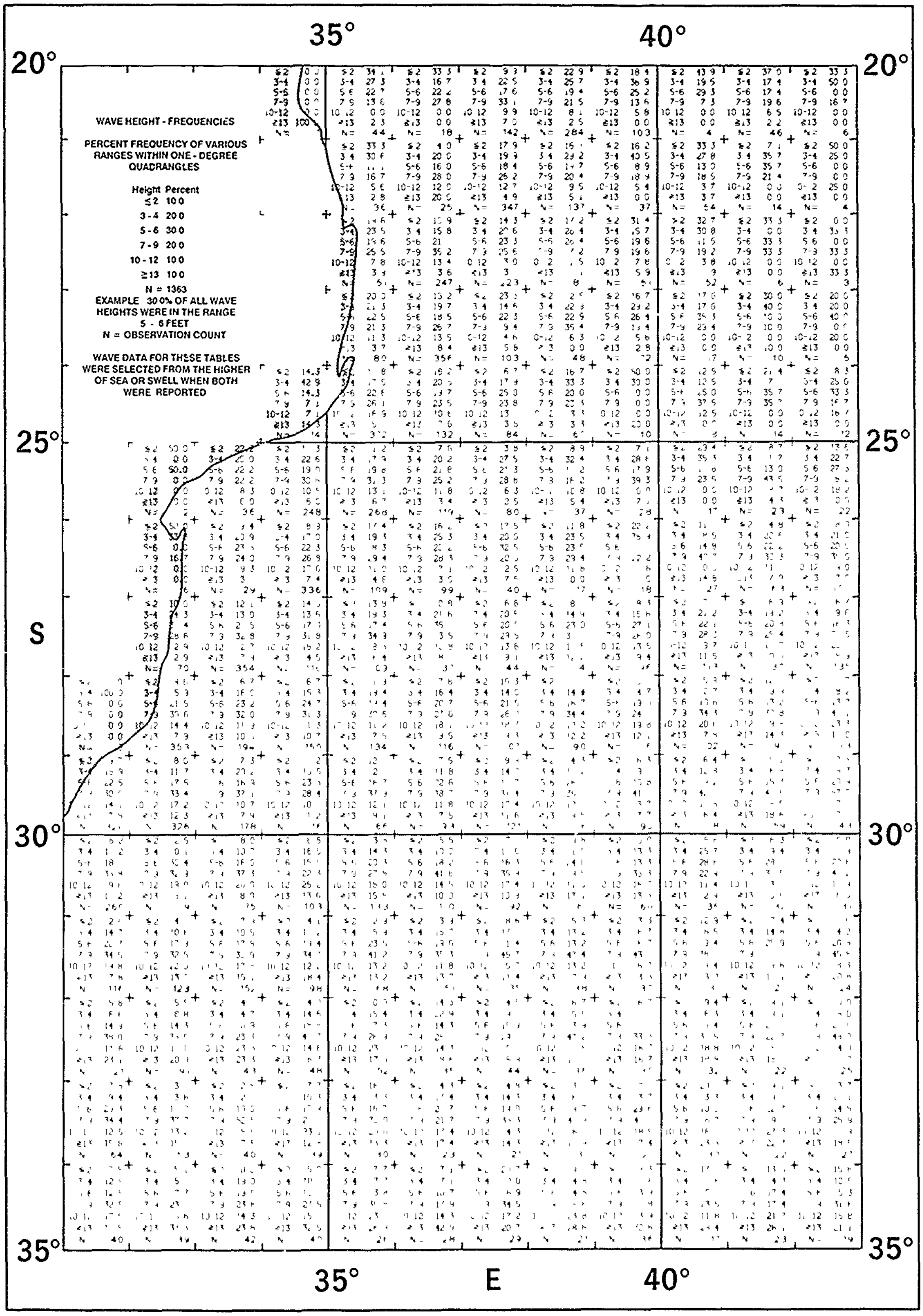
April **Wave Height**



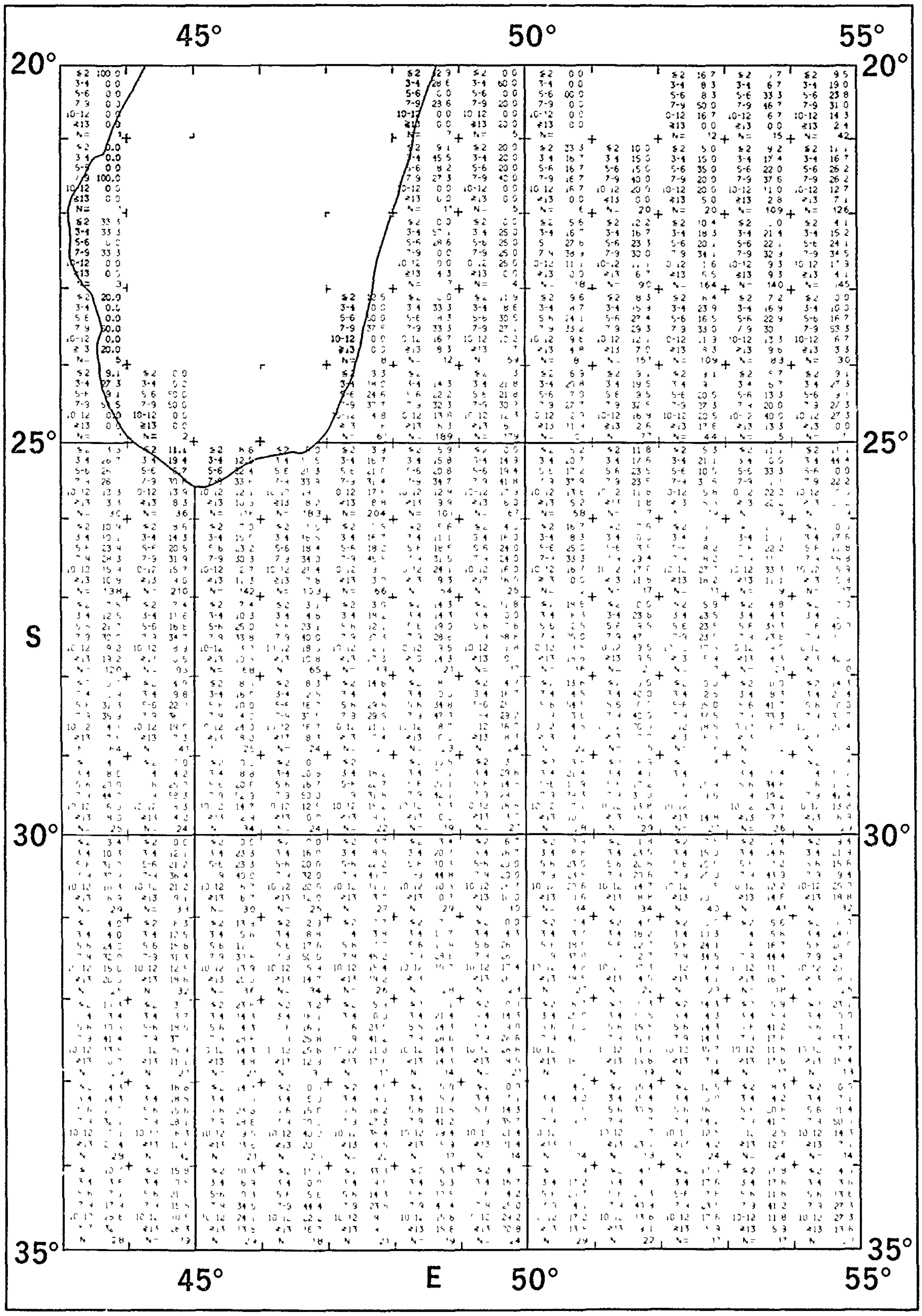
April **Wave Height**

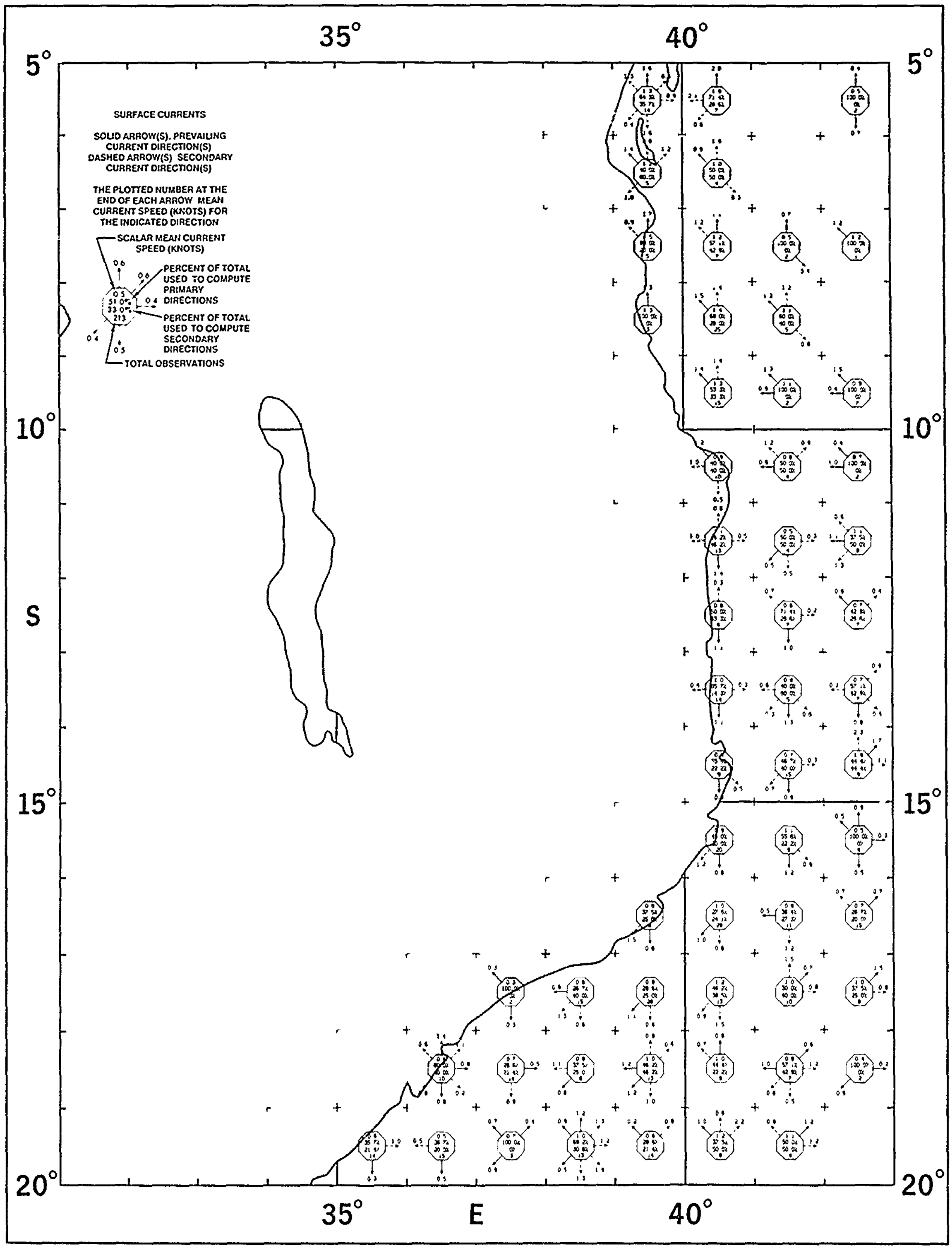


April **Wave Height**

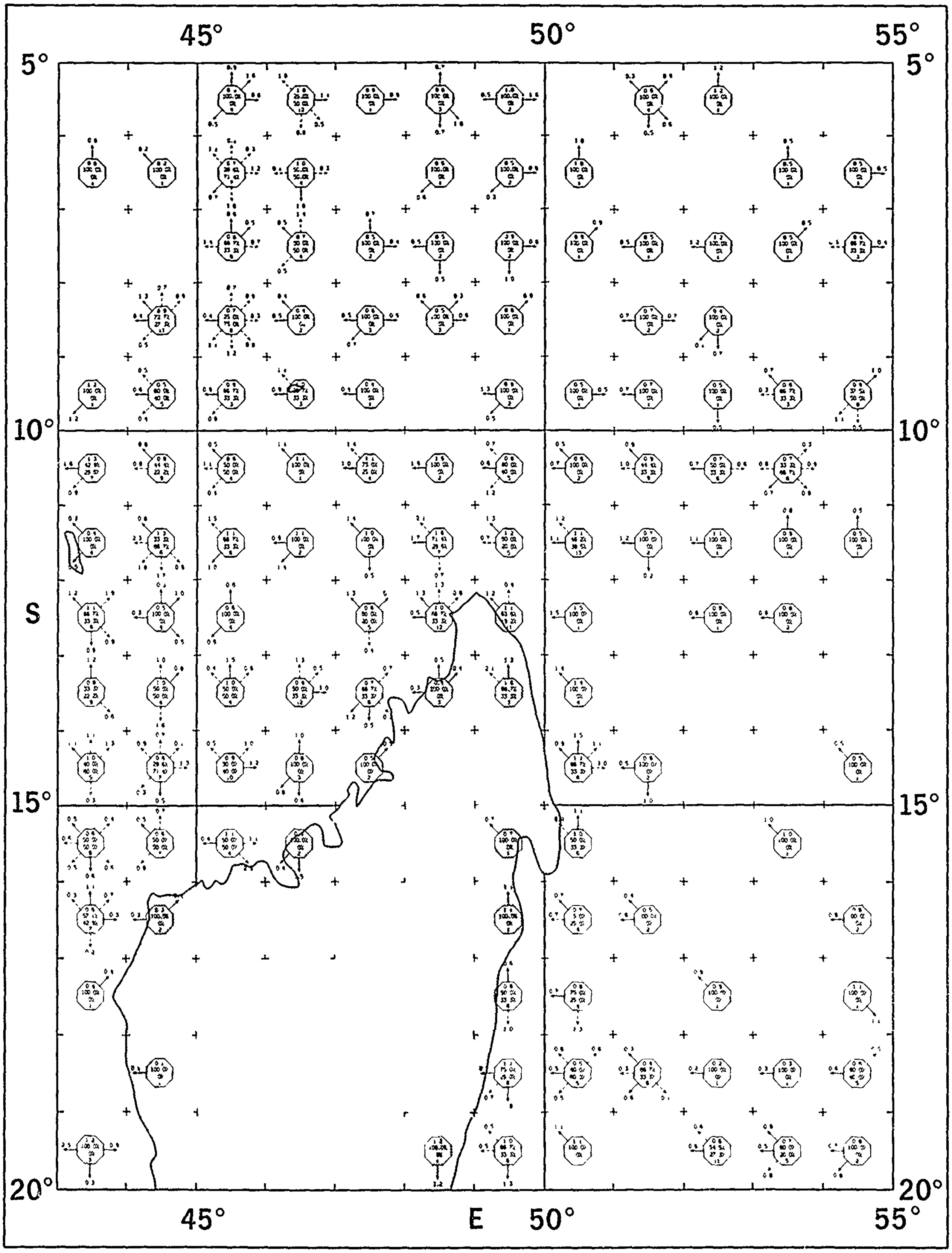


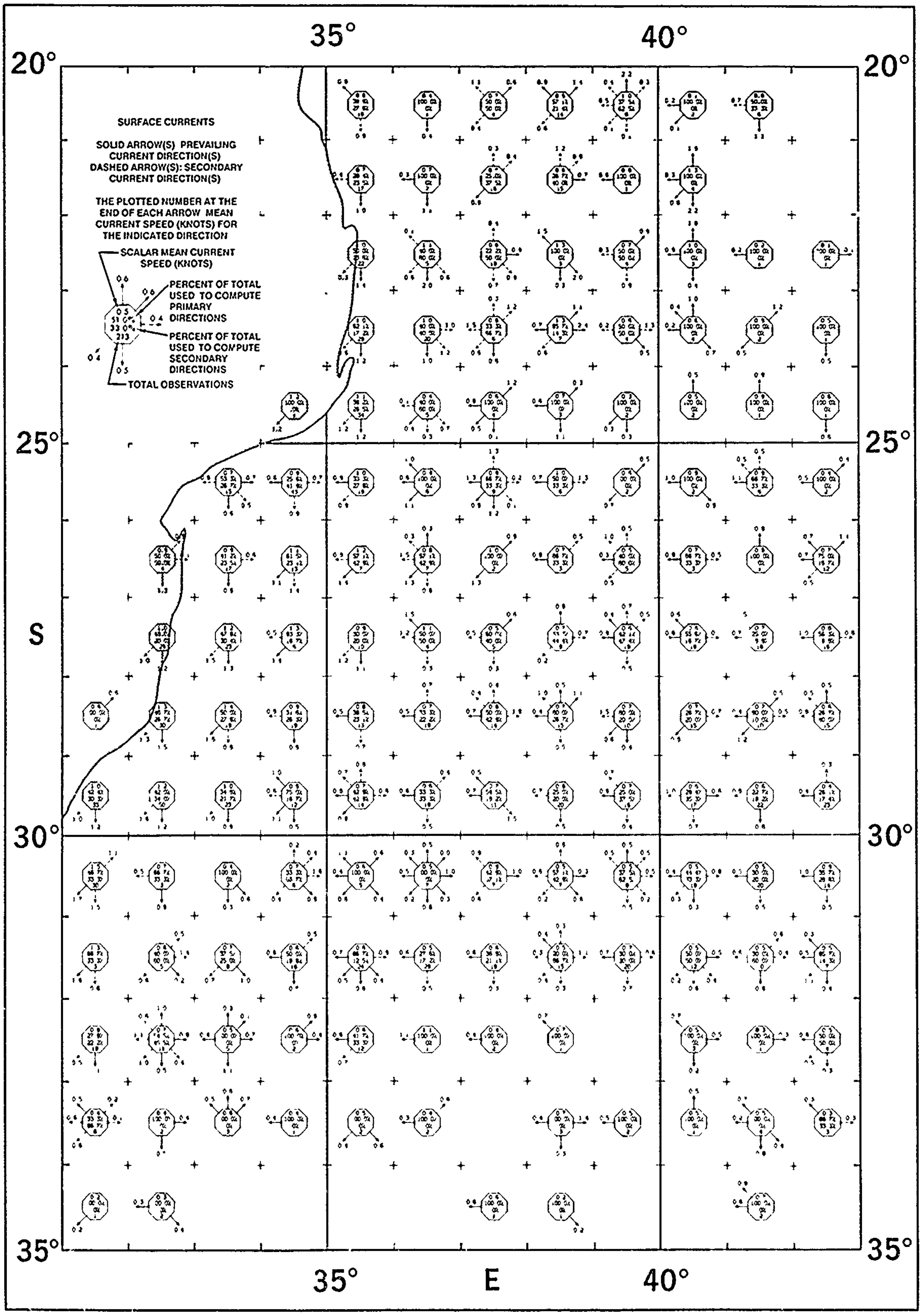
April Wave Height




35°
40°
5°
10°
S
15°
20°
E
SURFACE CURRENTS
SOLID ARROW(S). PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS

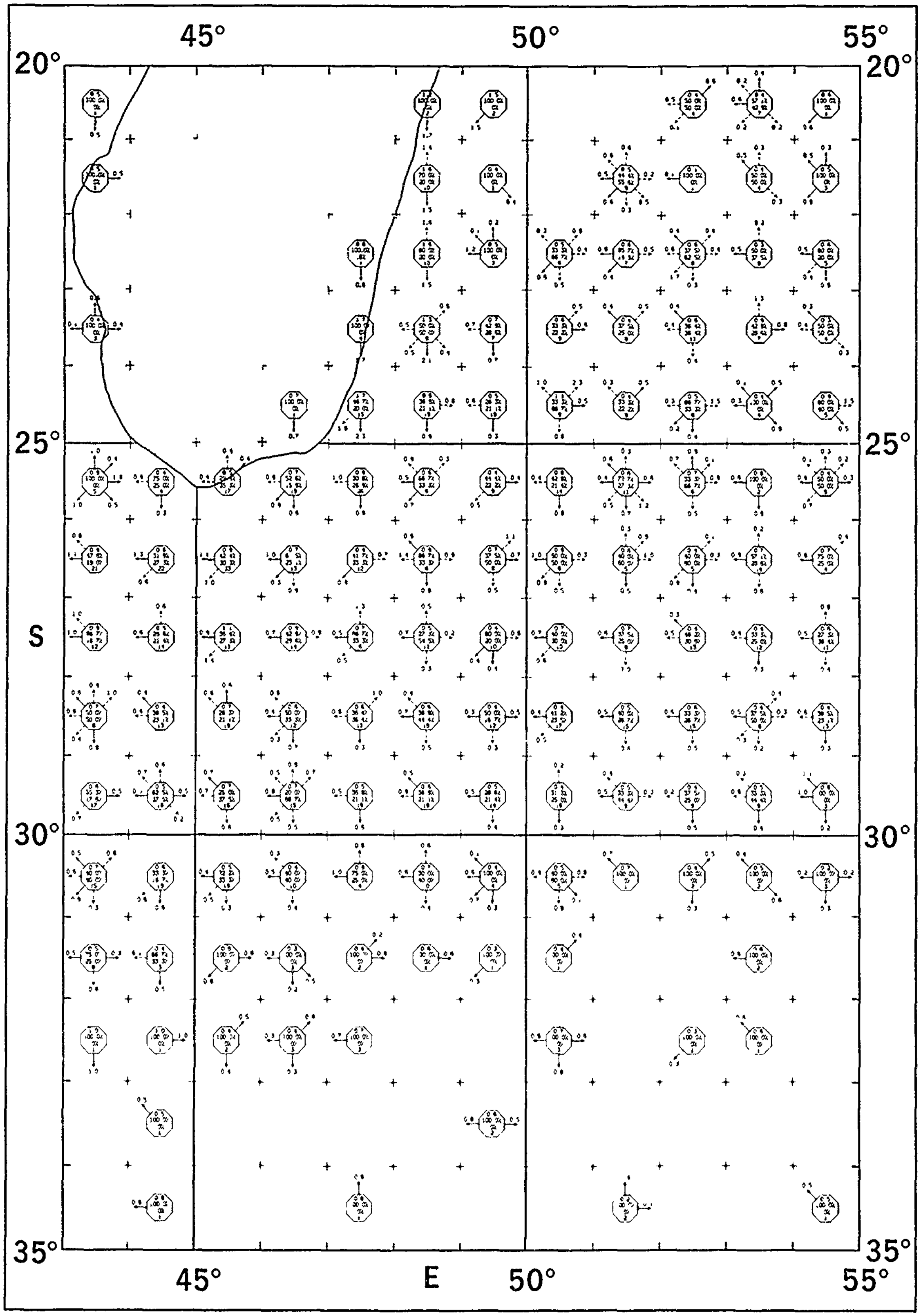
April — Surface Currents




35°
40°
20°
20°
SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S): SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS
25°
25°
S
30°
30°
35°
35°
35°
E
40°

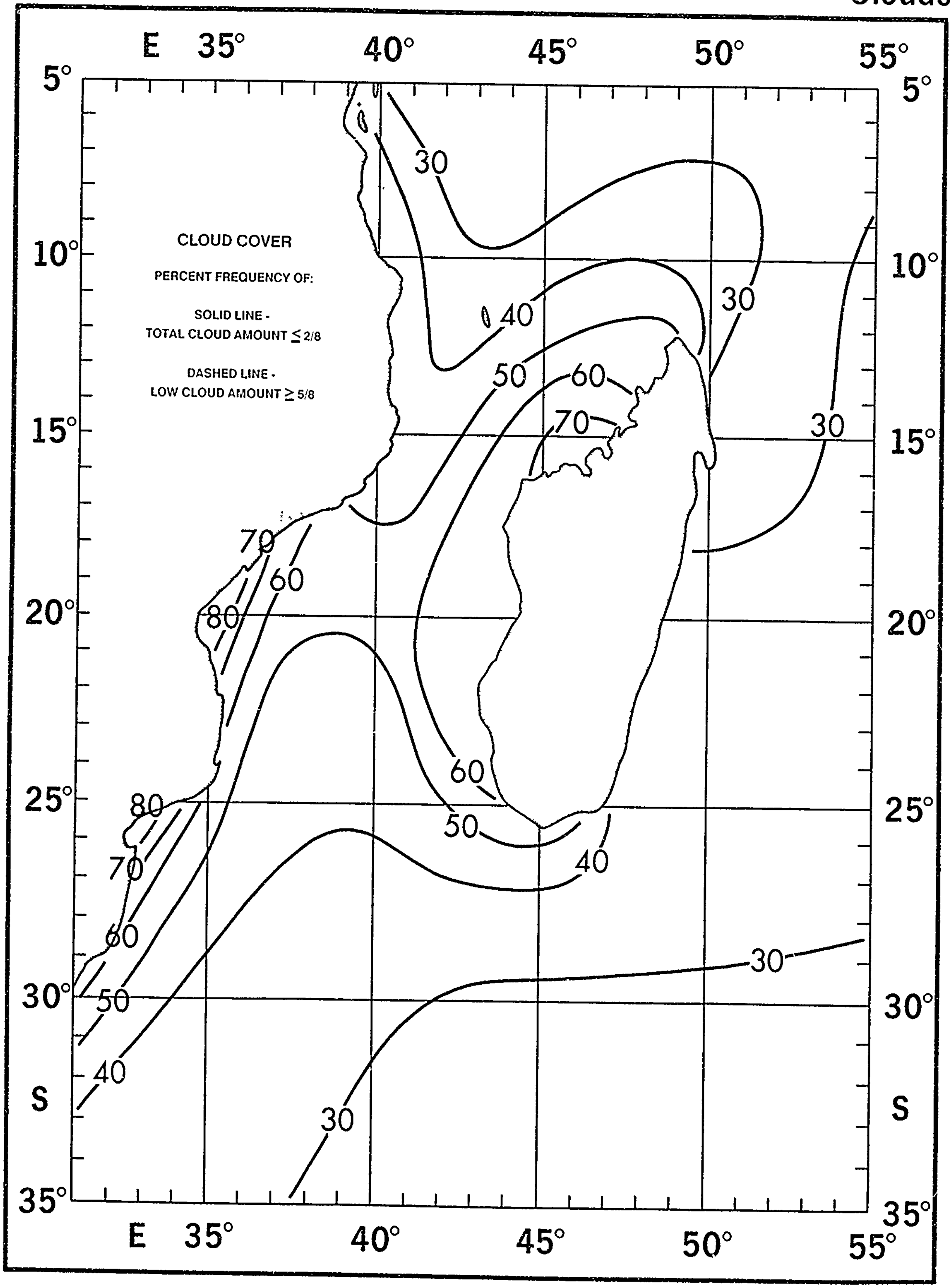
April

Surface Currents



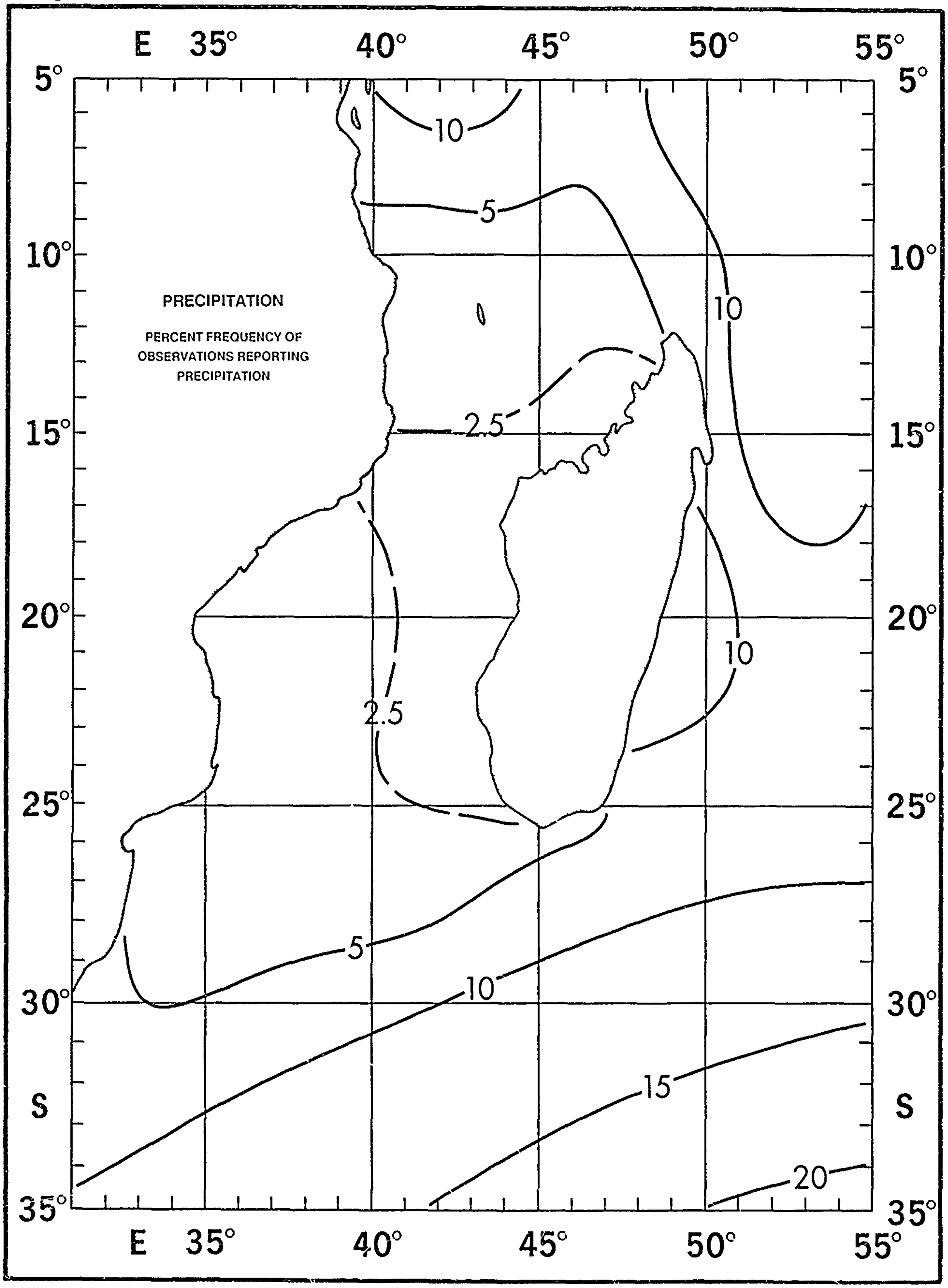
May

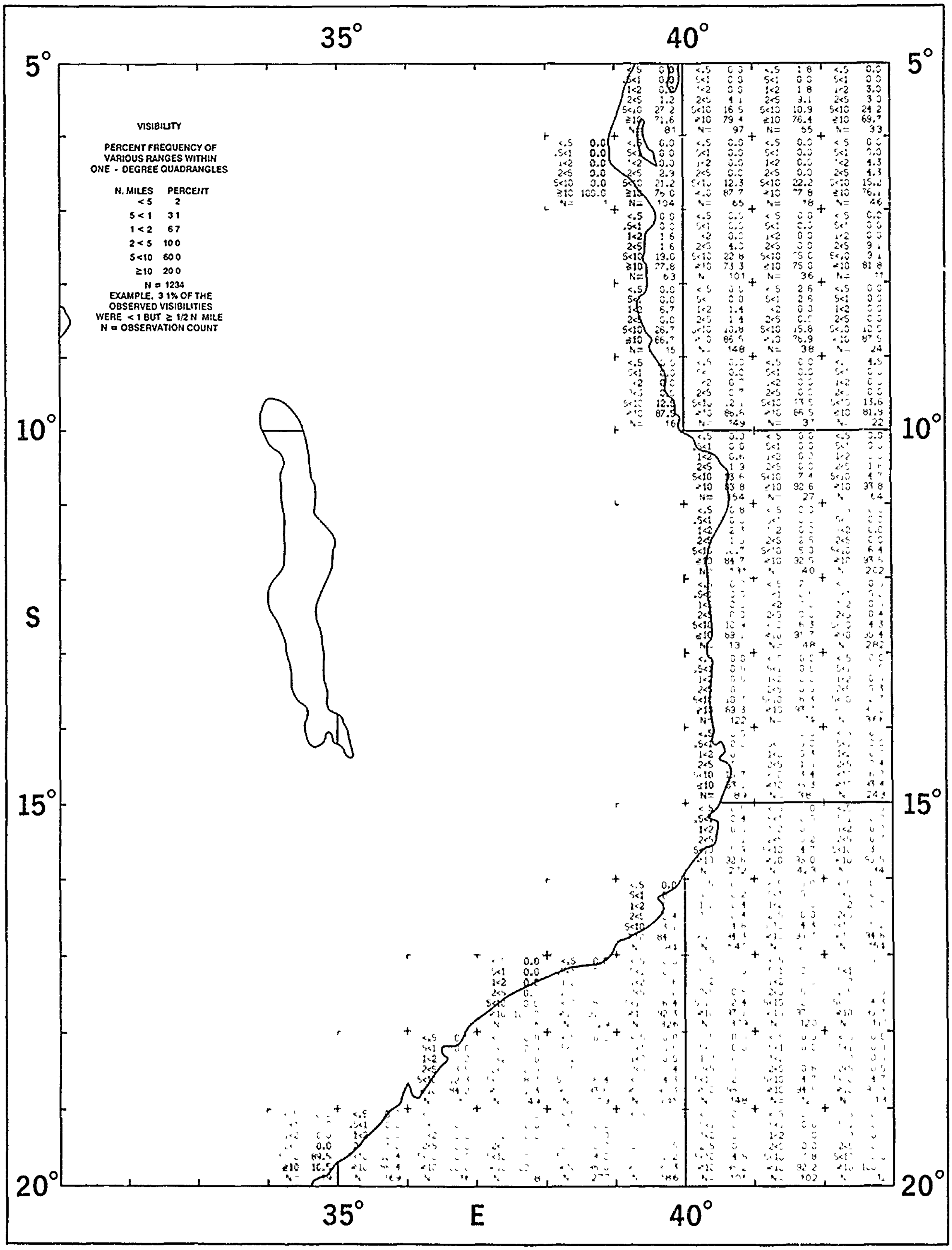
Clouds



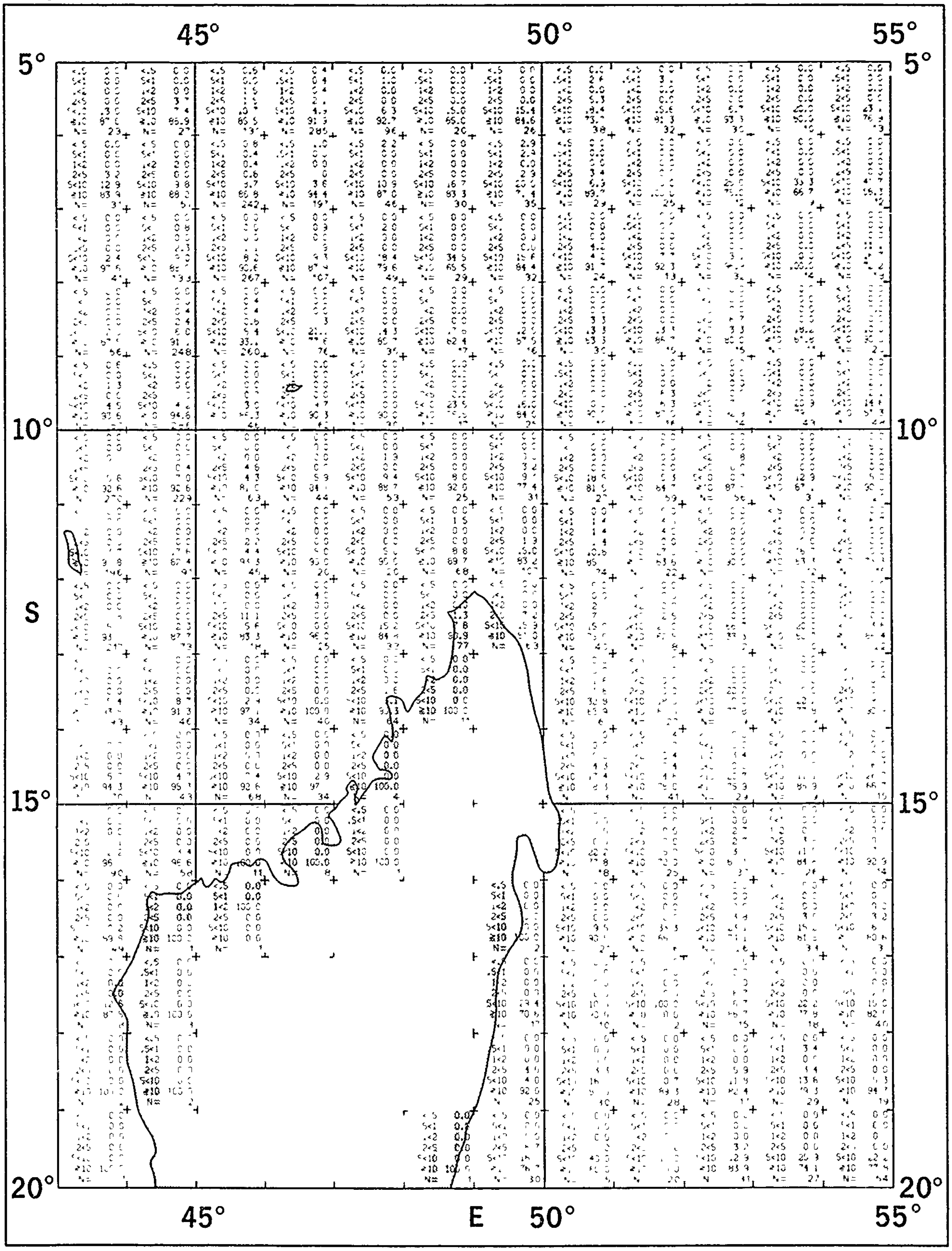
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° 35°
S
CLOUD COVER
PERCENT FREQUENCY OF:
SOLID LINE -
TOTAL CLOUD AMOUNT ≤ 2/8
DASHED LINE -
LOW CLOUD AMOUNT ≥ 5/8
30
40
50
60
70
80

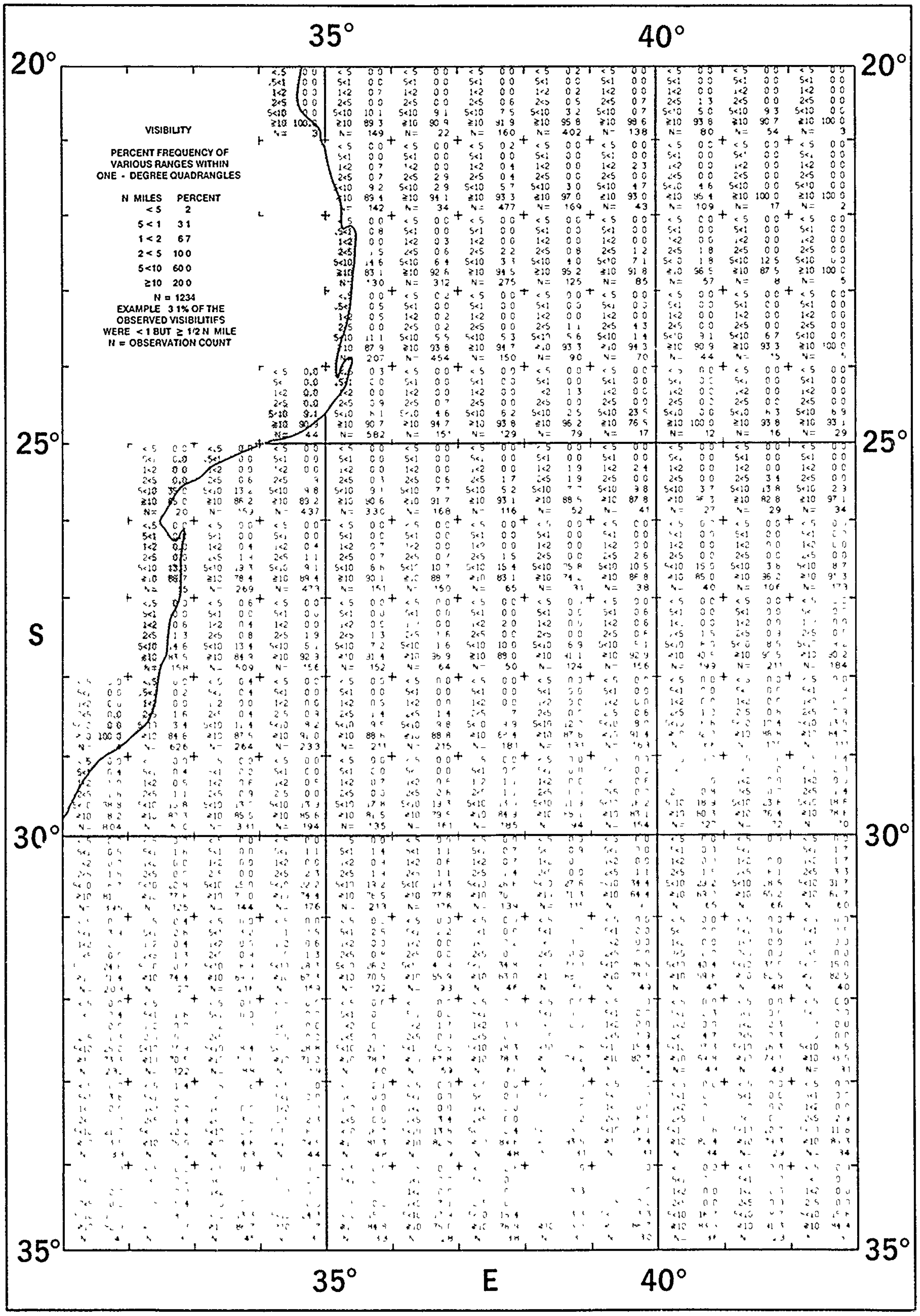
May Precipitation

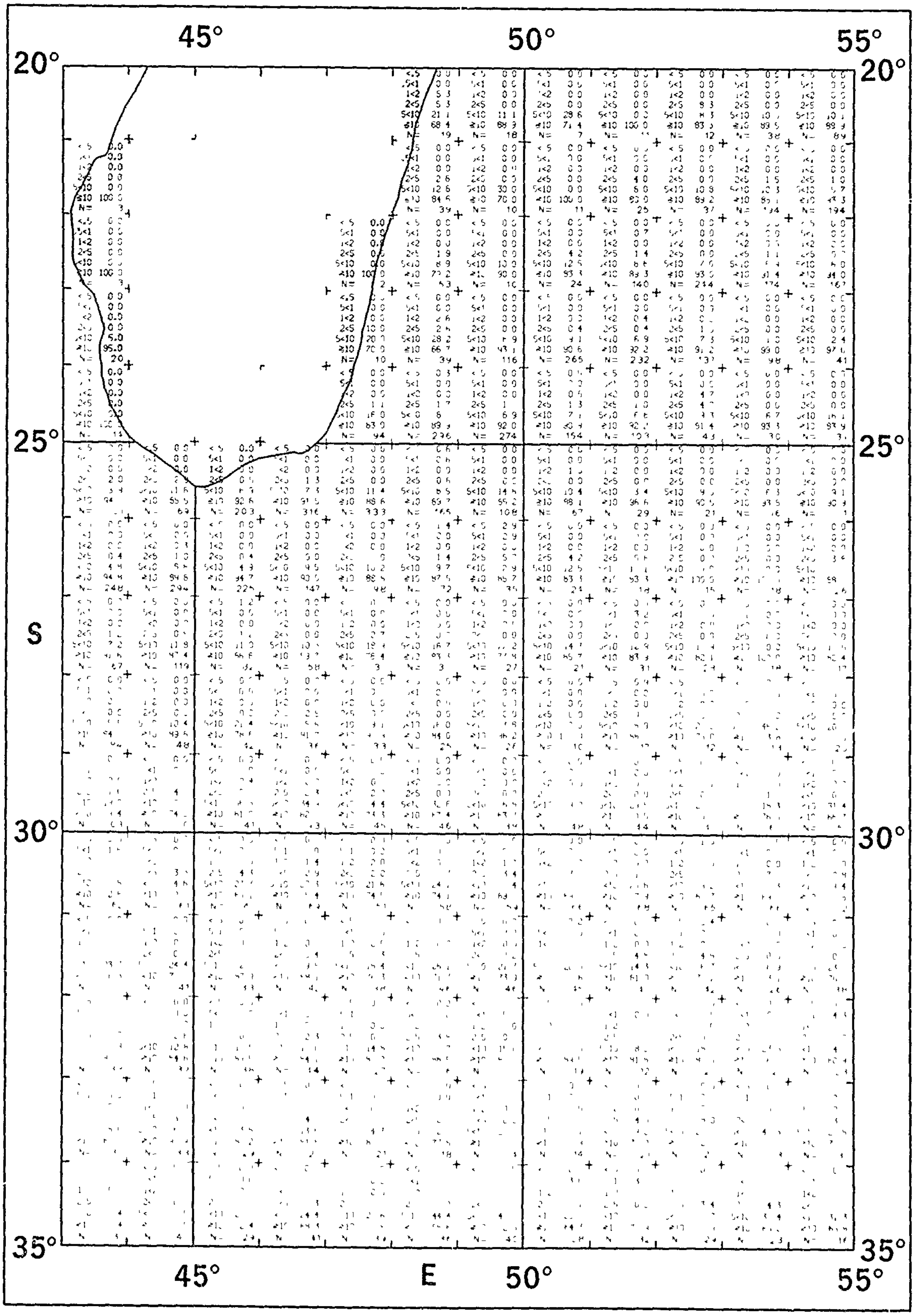


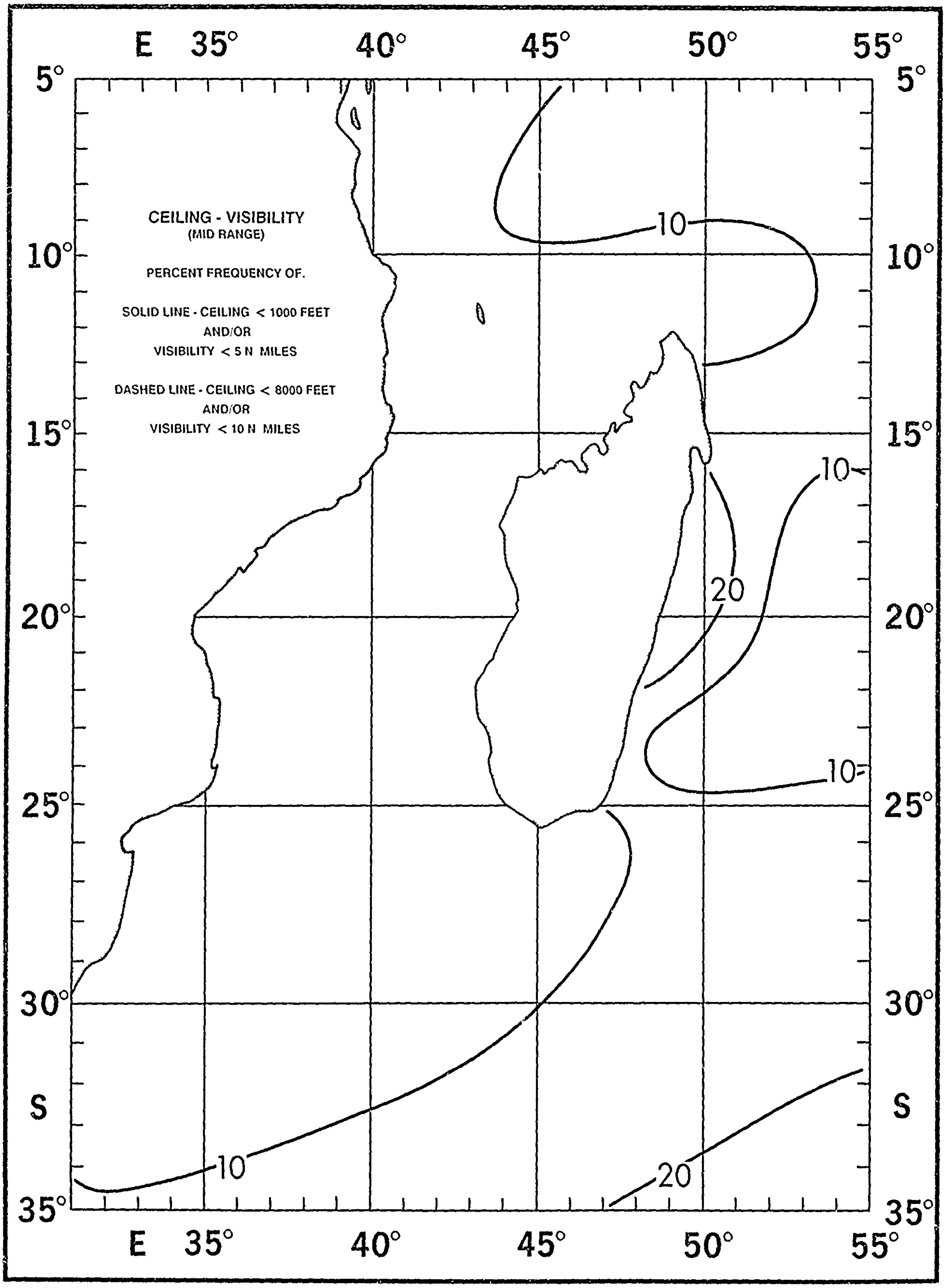

VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N. MILES PERCENT
< .5 2
.5 < 1 3 1
1 < 2 6 7
2 < 5 10 0
5 < 10 60 0
≥10 20 0
N = 1234
EXAMPLE. 3.1% OF THE OBSERVED VISIBILITIES WERE < 1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT
35°
40°
5°
10°
15°
20°
S
E

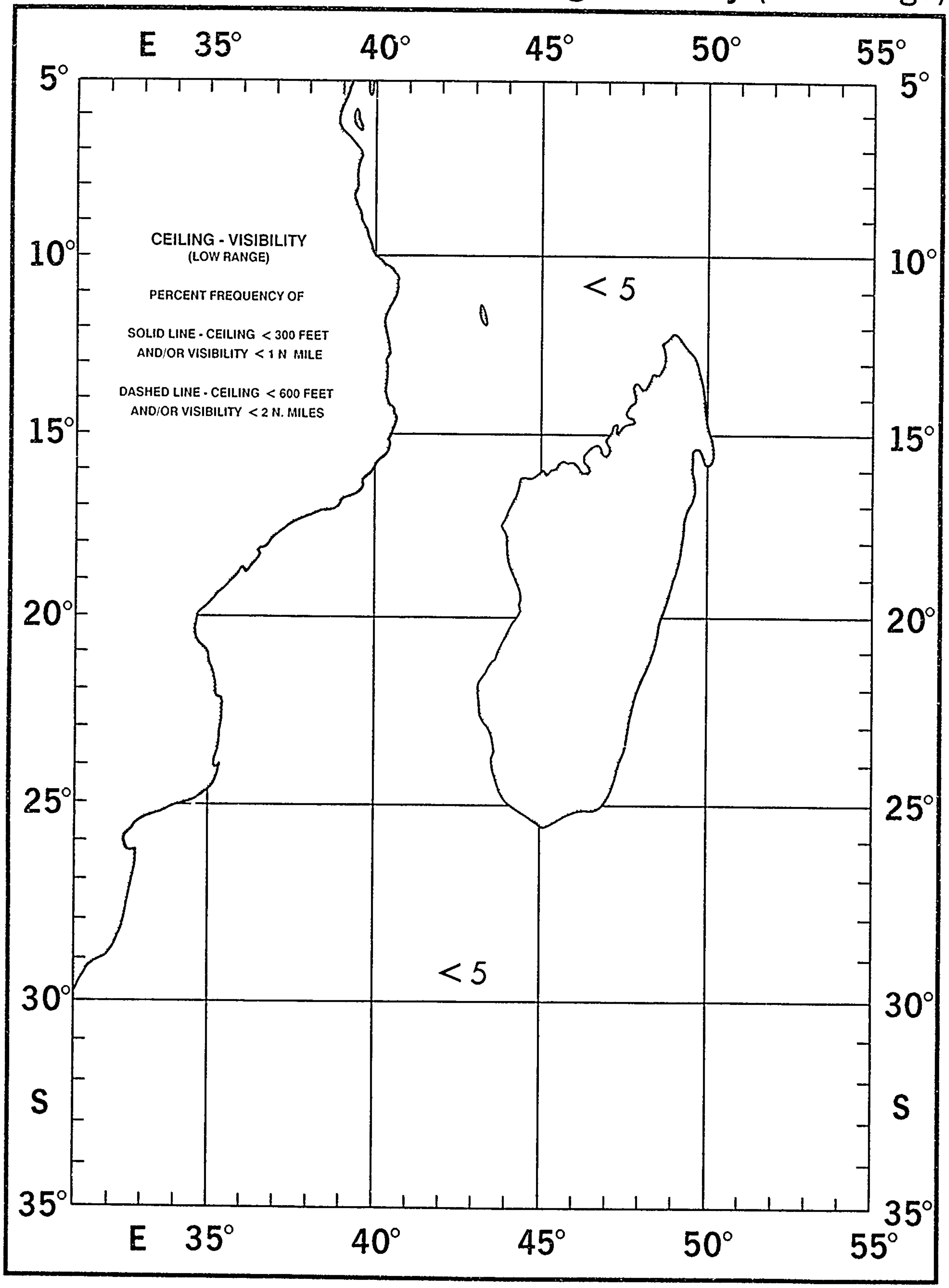
May Visibility

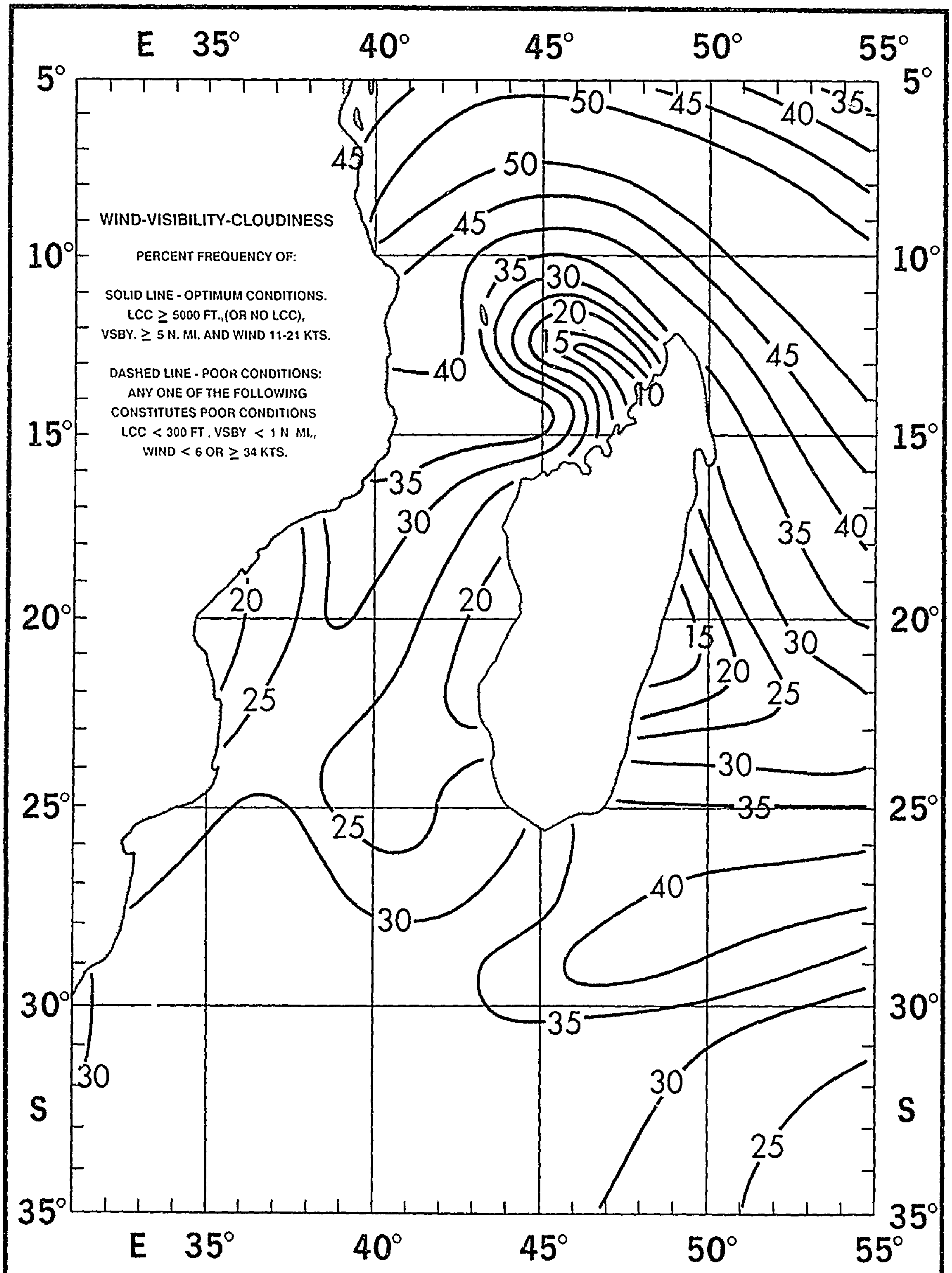


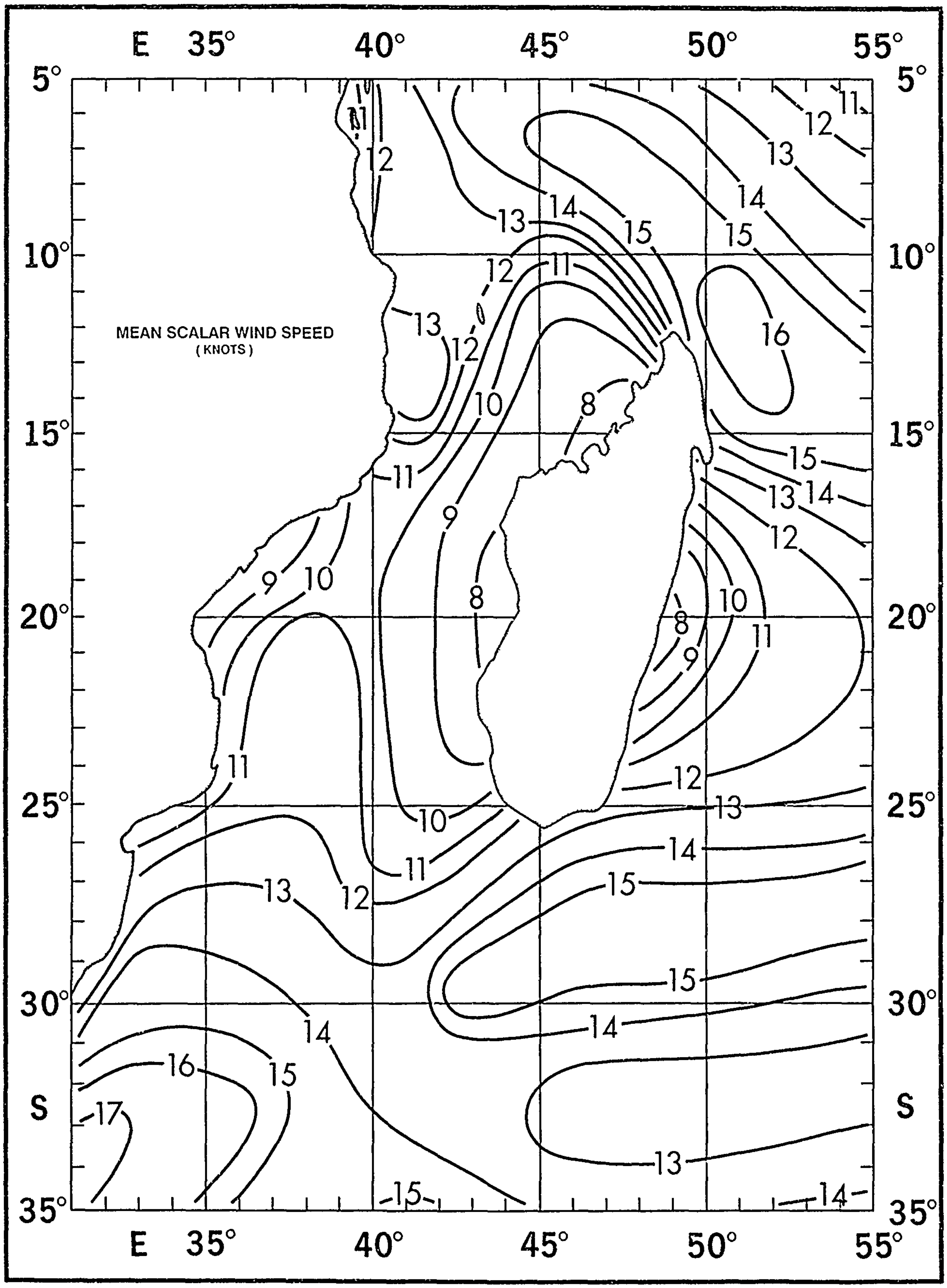

VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
<5 2
5<1 31
1<2 67
2<5 100
5<10 600
≥10 200
N = 1234
EXAMPLE 3.1% OF THE OBSERVED VISIBILITIES WERE <1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT
35°
40°
20°
25°
30°
35°
S
E


45°
50°
55°
20°
25°
30°
35°
S
E

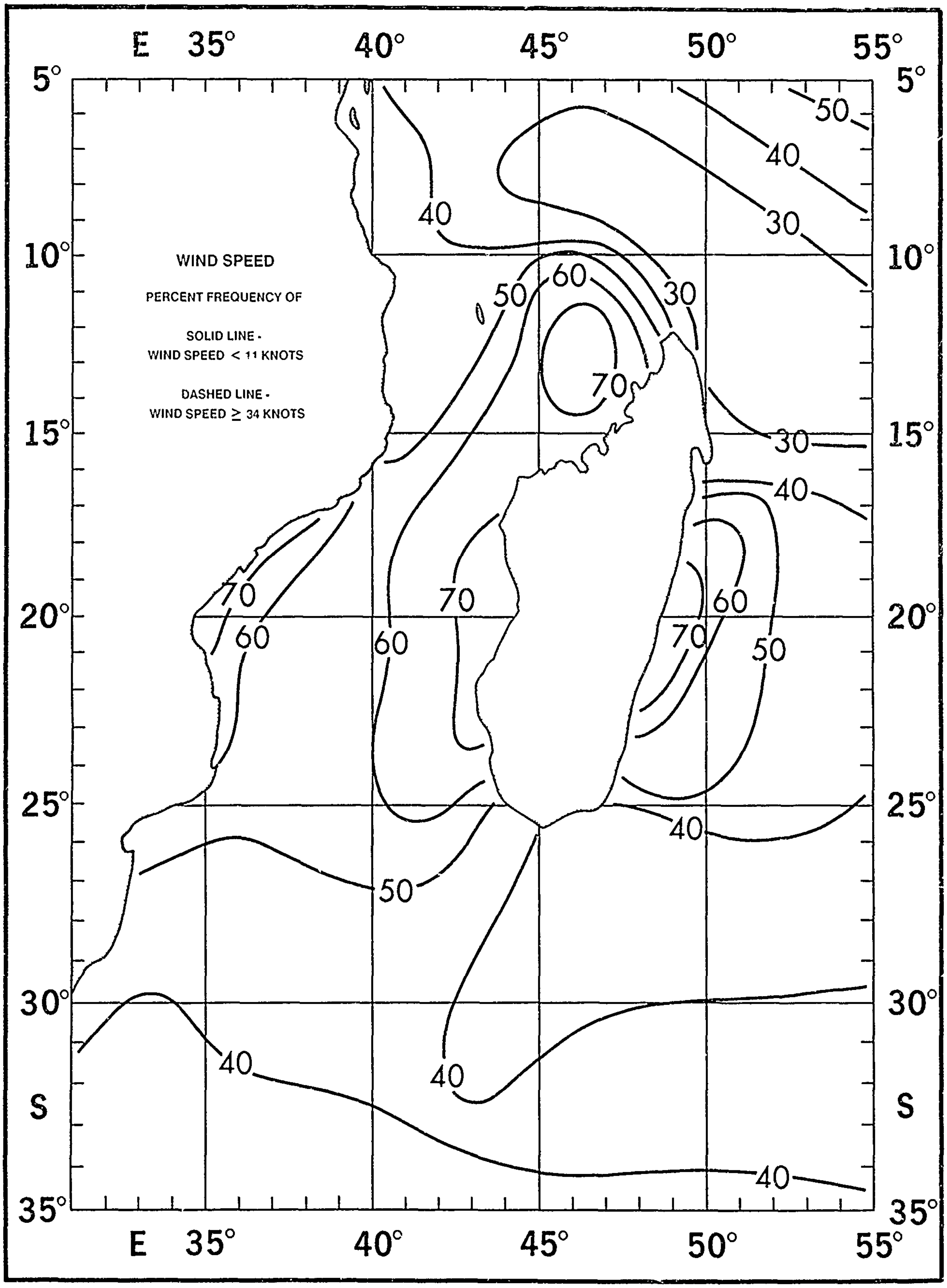

E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
CEILING - VISIBILITY
(MID RANGE)
PERCENT FREQUENCY OF.
SOLID LINE - CEILING < 1000 FEET
AND/OR
VISIBILITY < 5 N MILES
DASHED LINE - CEILING < 8000 FEET
AND/OR
VISIBILITY < 10 N MILES
10
20
10
20


E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° 35°
CEILING - VISIBILITY
(LOW RANGE)
PERCENT FREQUENCY OF
SOLID LINE - CEILING < 300 FEET
AND/OR VISIBILITY < 1 N MILE
DASHED LINE - CEILING < 600 FEET
AND/OR VISIBILITY < 2 N. MILES
< 5
< 5
S

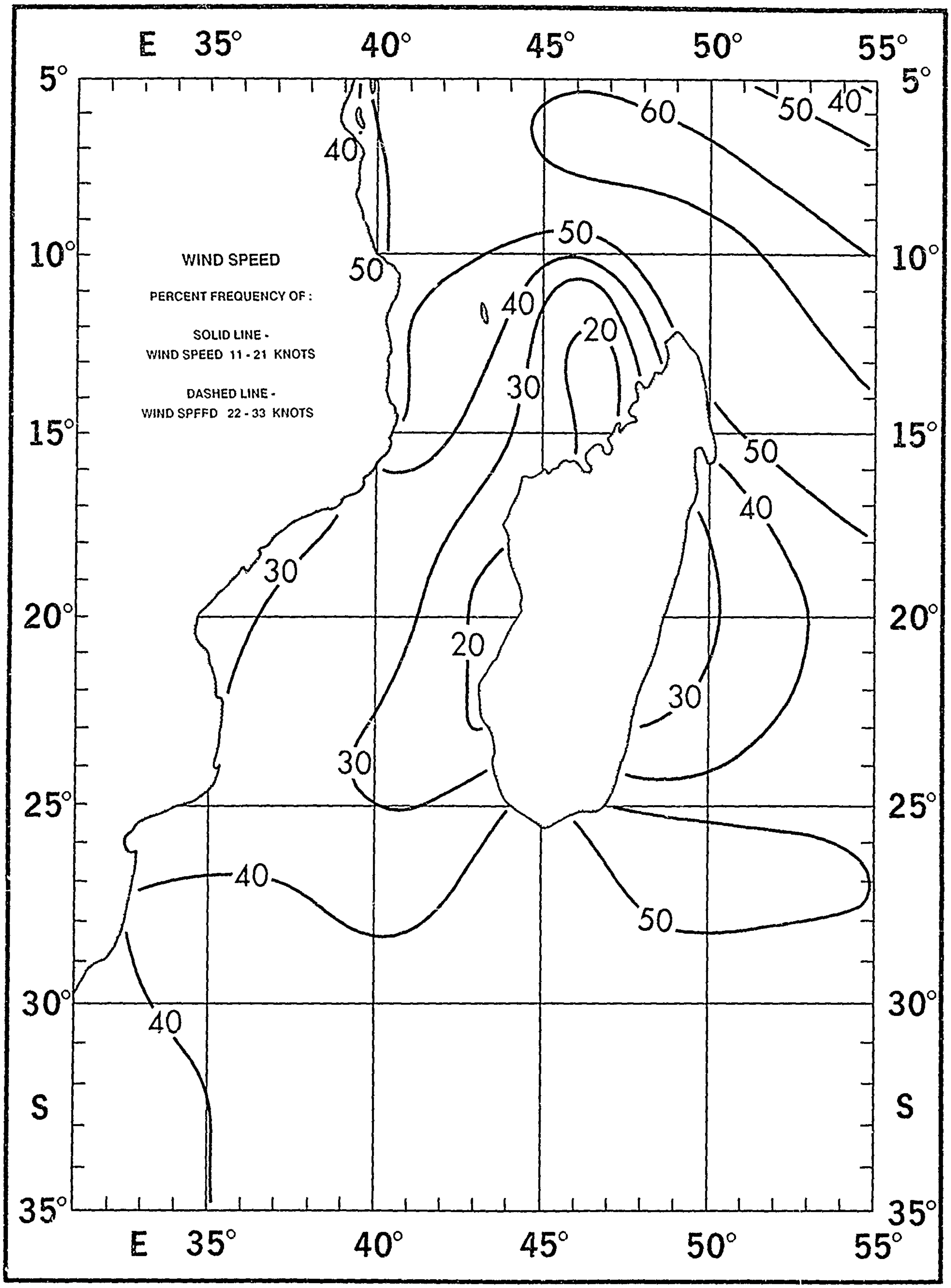

E 35°
40°
45°
50°
55°
5°
10°
15°
20°
25°
30°
S
35°
WIND-VISIBILITY-CLOUDINESS
PERCENT FREQUENCY OF:
SOLID LINE - OPTIMUM CONDITIONS.
LCC ≥ 5000 FT.,(OR NO LCC),
VSBY. ≥ 5 N. MI. AND WIND 11-21 KTS.
DASHED LINE - POOR CONDITIONS:
ANY ONE OF THE FOLLOWING
CONSTITUTES POOR CONDITIONS
LCC < 300 FT , VSBY < 1 N MI.,
WIND < 6 OR ≥ 34 KTS.
50
45
40
35
30
25
20
15
10


E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
MEAN SCALAR WIND SPEED
(KNOTS)
8
9
10
11
12
13
14
15
16
17

May Wind Speed <11 and ≥34 Knots

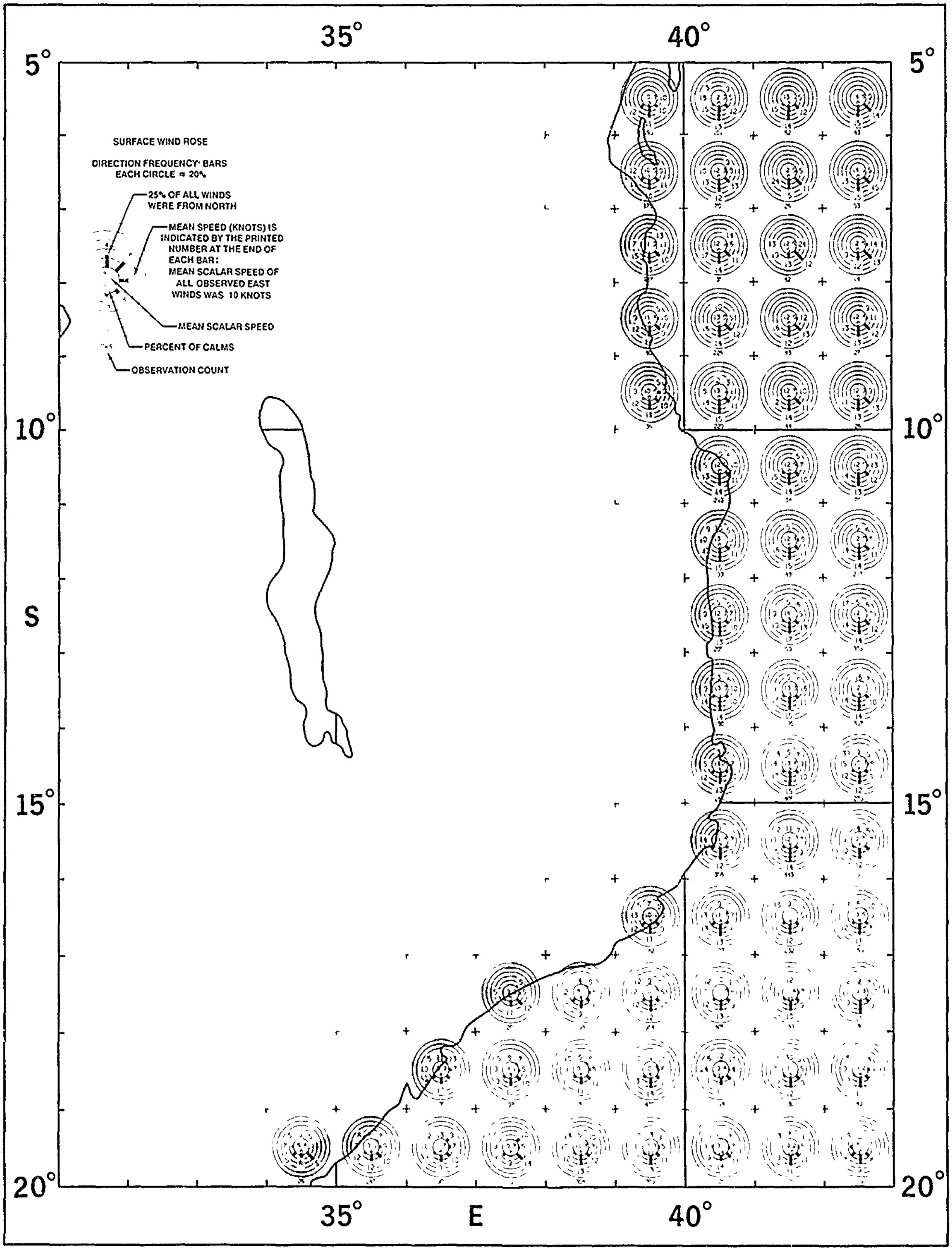


May Wind Speed 11 - 21 and 22 - 33 Knots



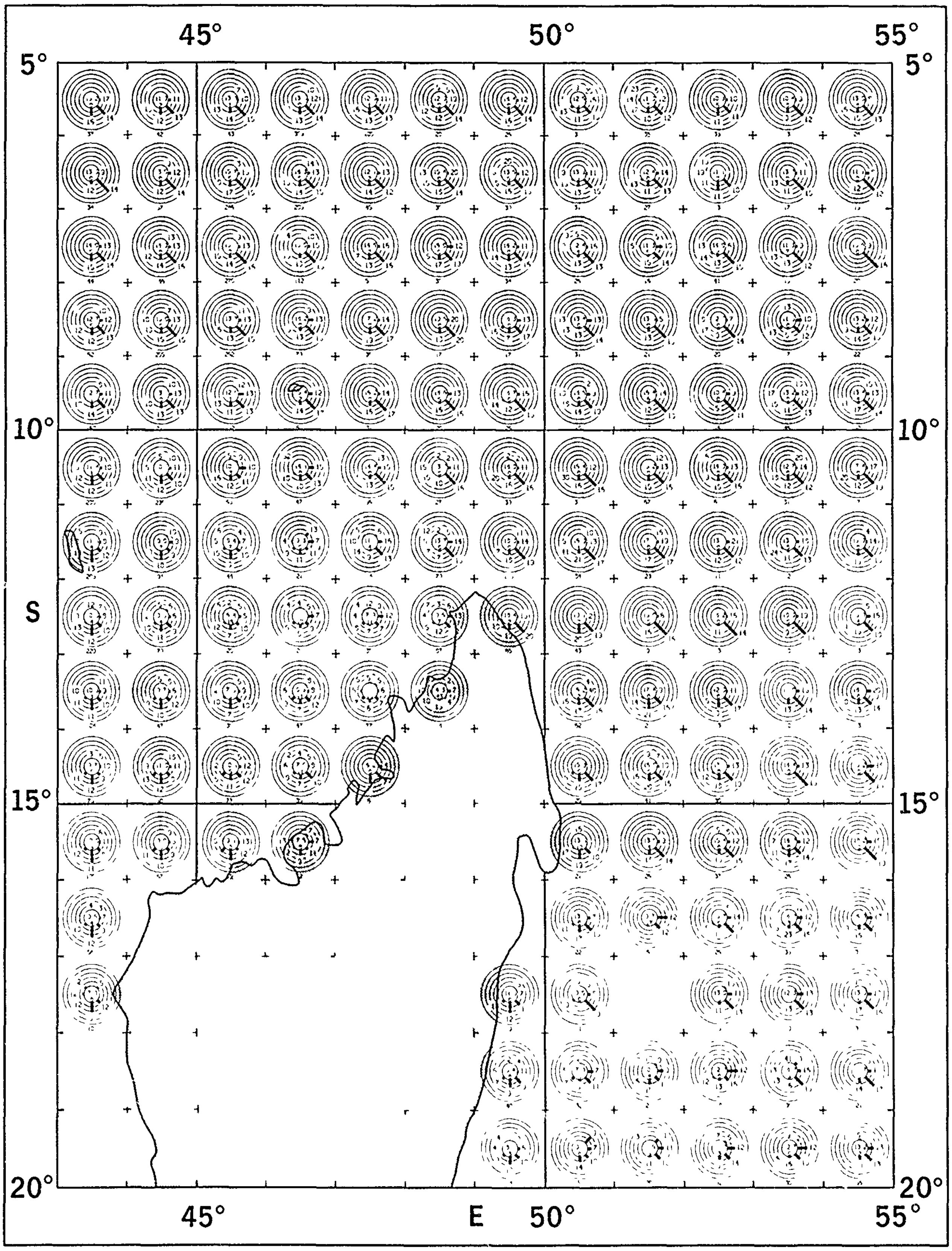
May

Surface Wind Roses



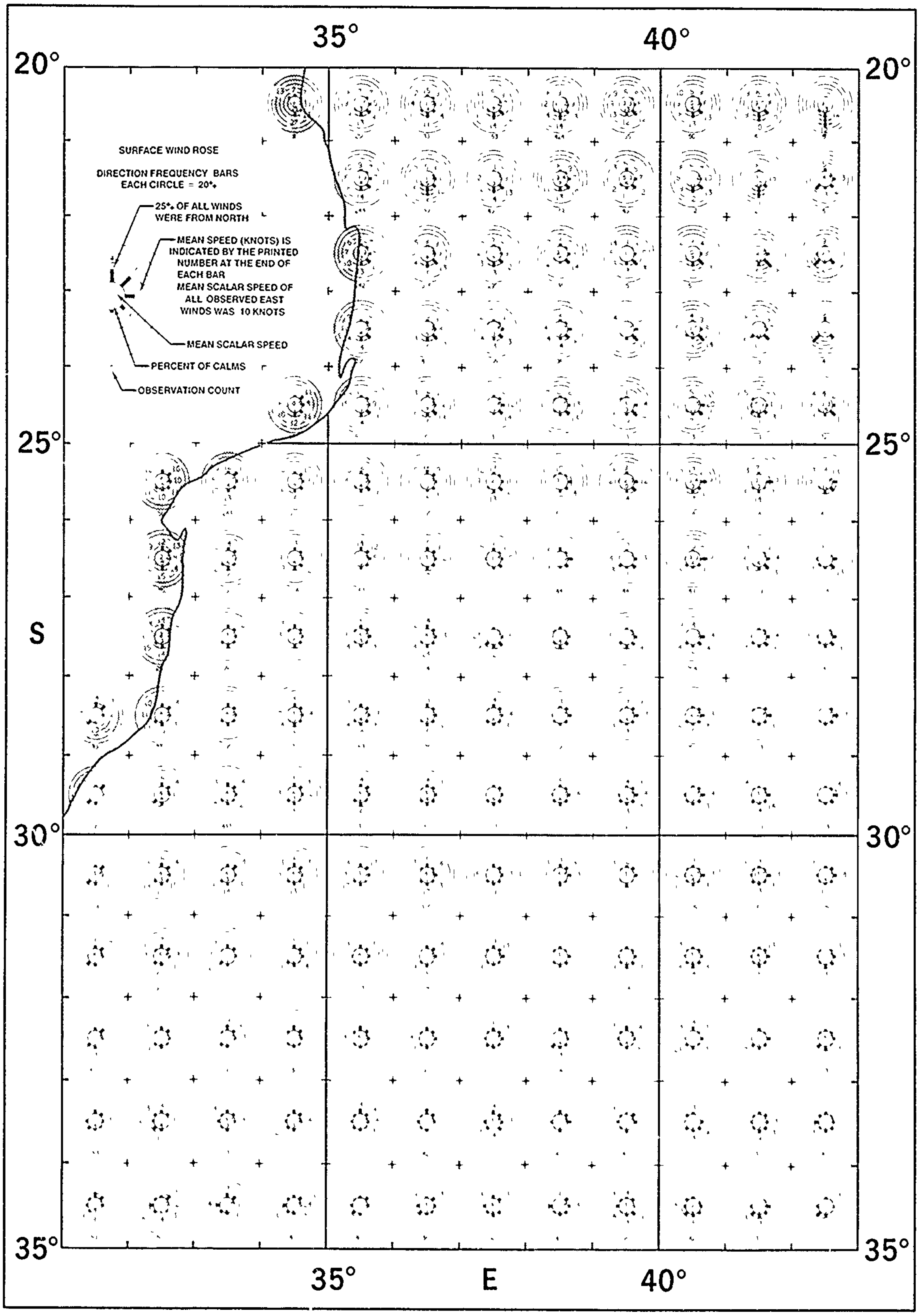
May

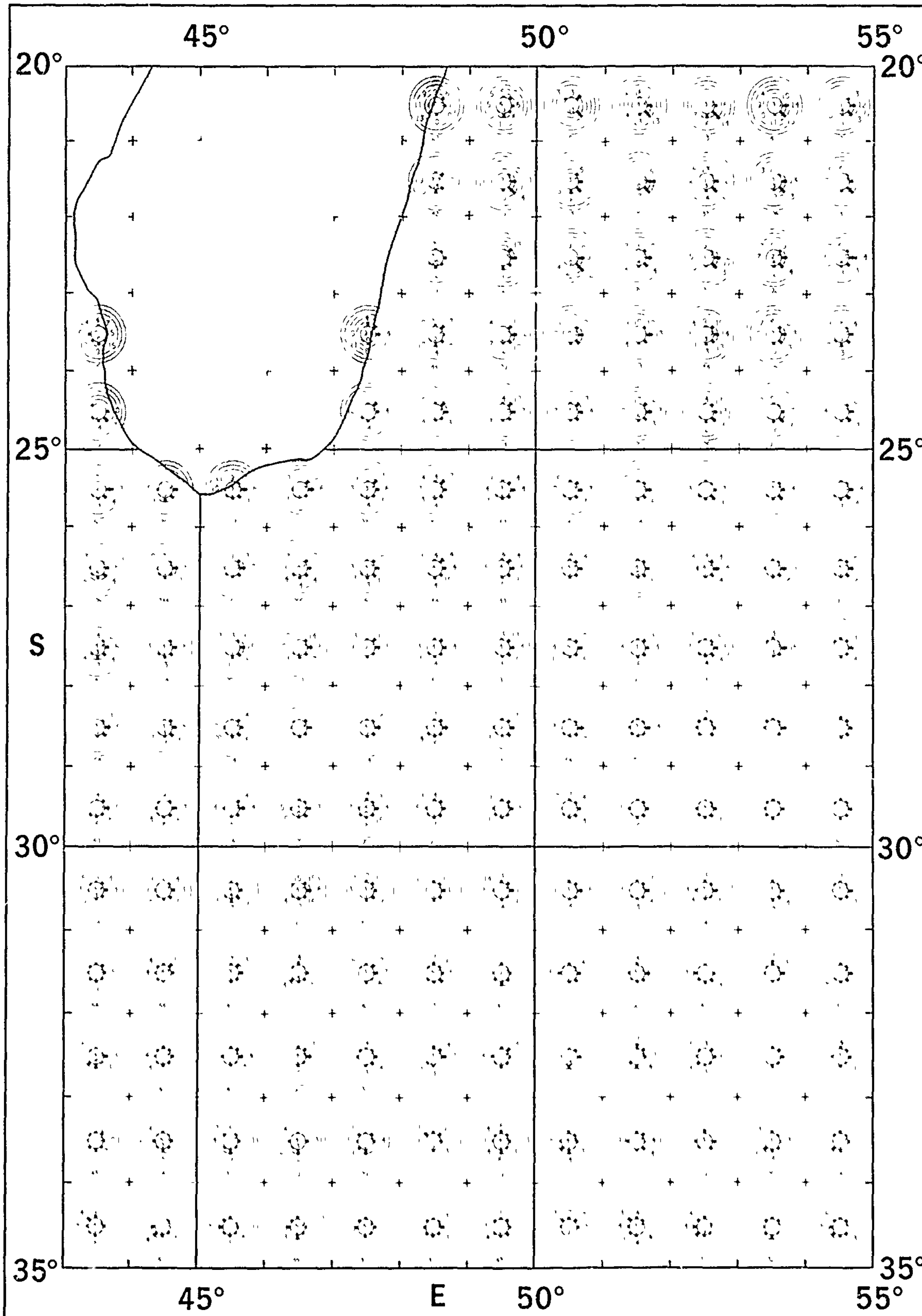
Surface Wind Roses

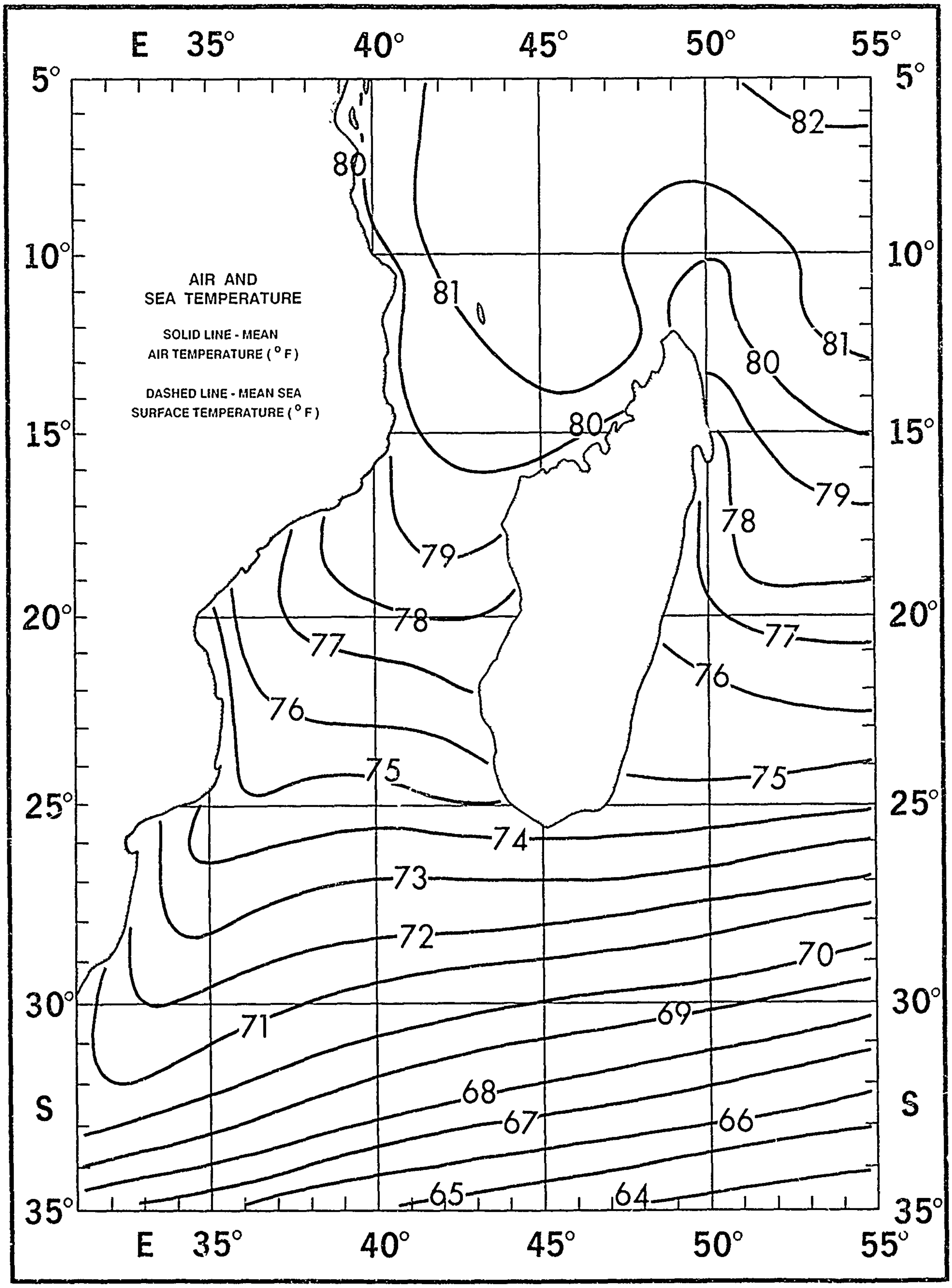


May

Surface Wind Roses

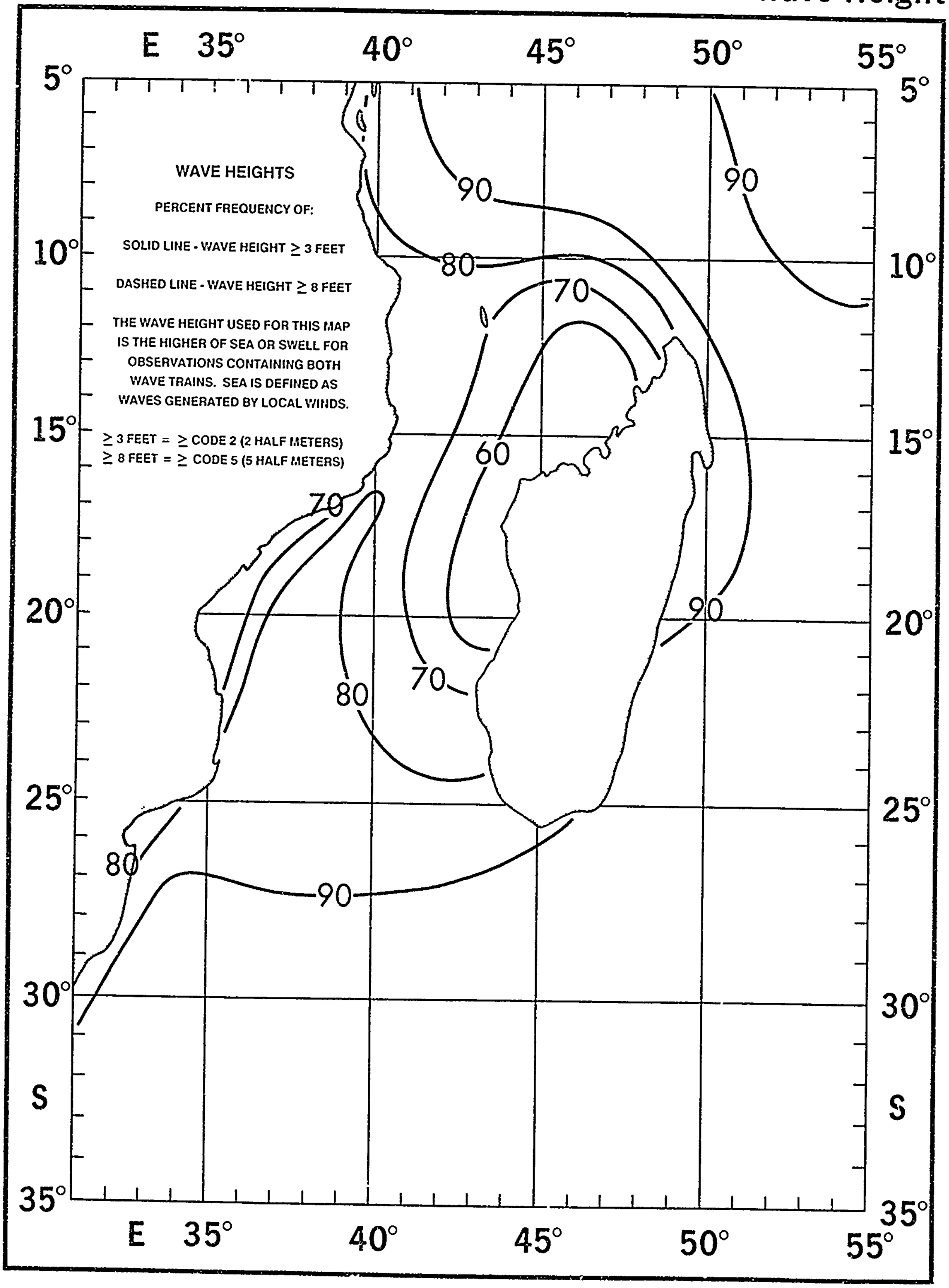



45°
50°
55°
20°
25°
S
30°
35°
E


E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
AIR AND
SEA TEMPERATURE
SOLID LINE - MEAN
AIR TEMPERATURE (°F)
DASHED LINE - MEAN SEA
SURFACE TEMPERATURE (°F)
82
80
81
80
81
80
79
78
79
78
77
77
76
76
75
75
74
73
72
70
71
69
68
67
66
65
64

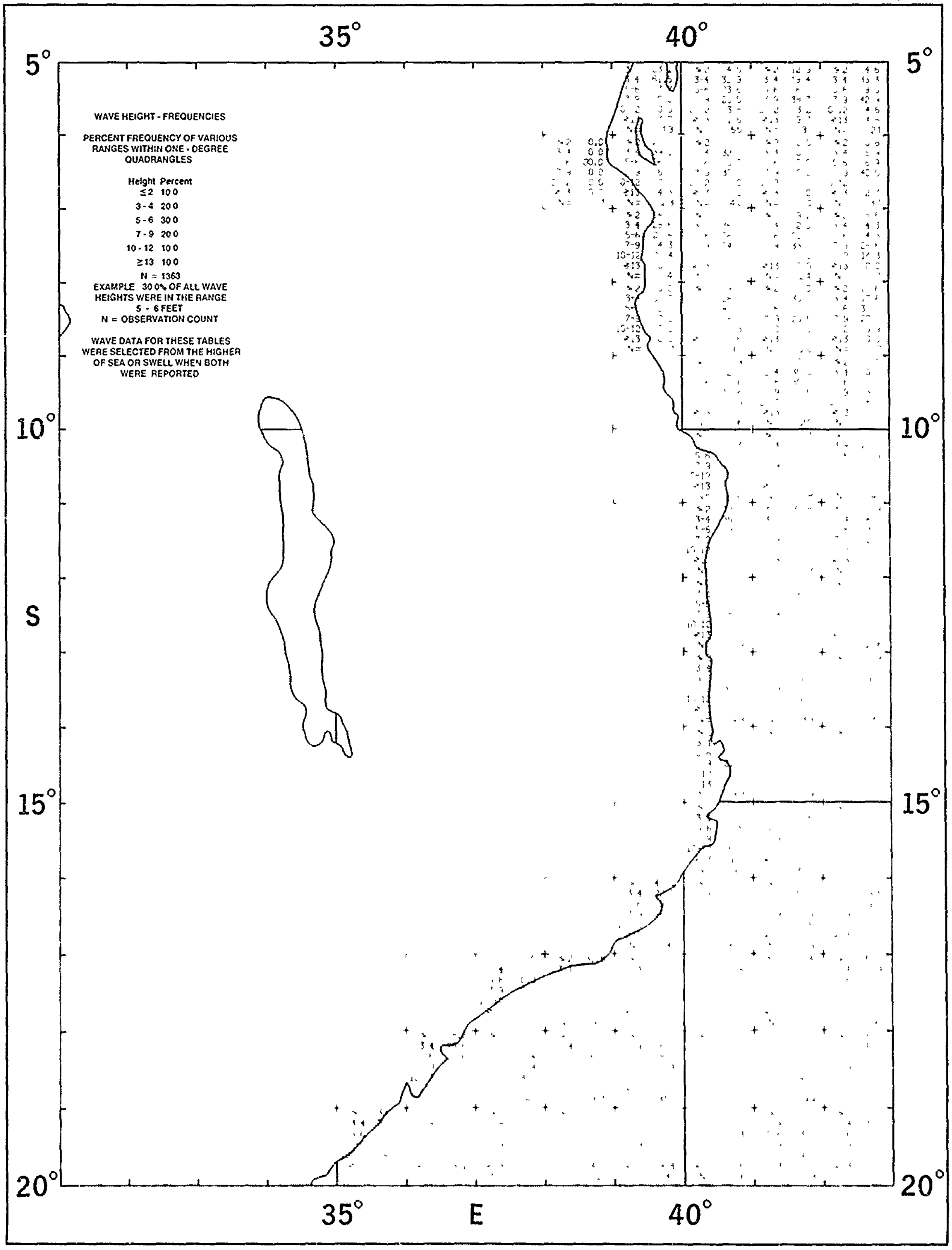
May

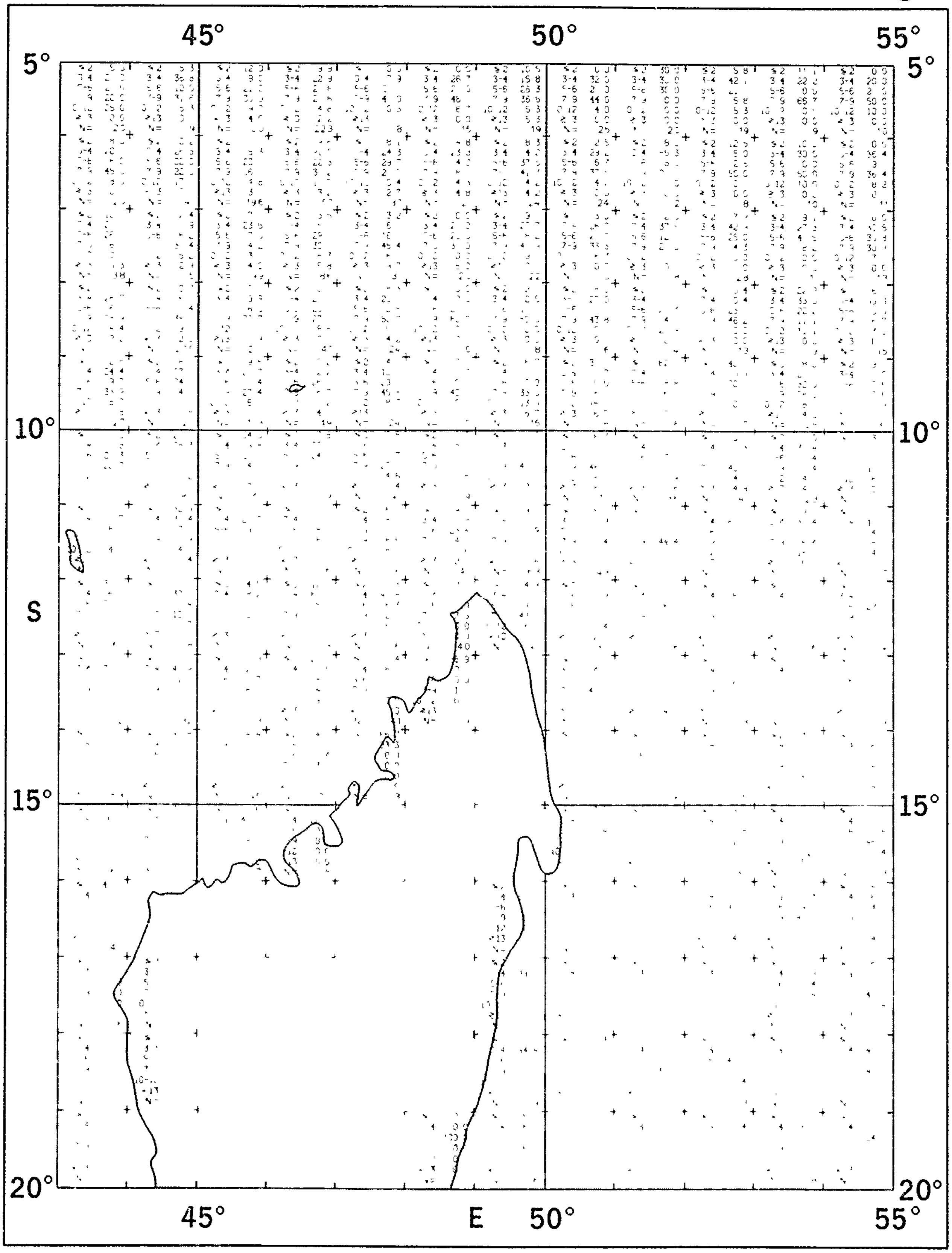
Wave Height



May

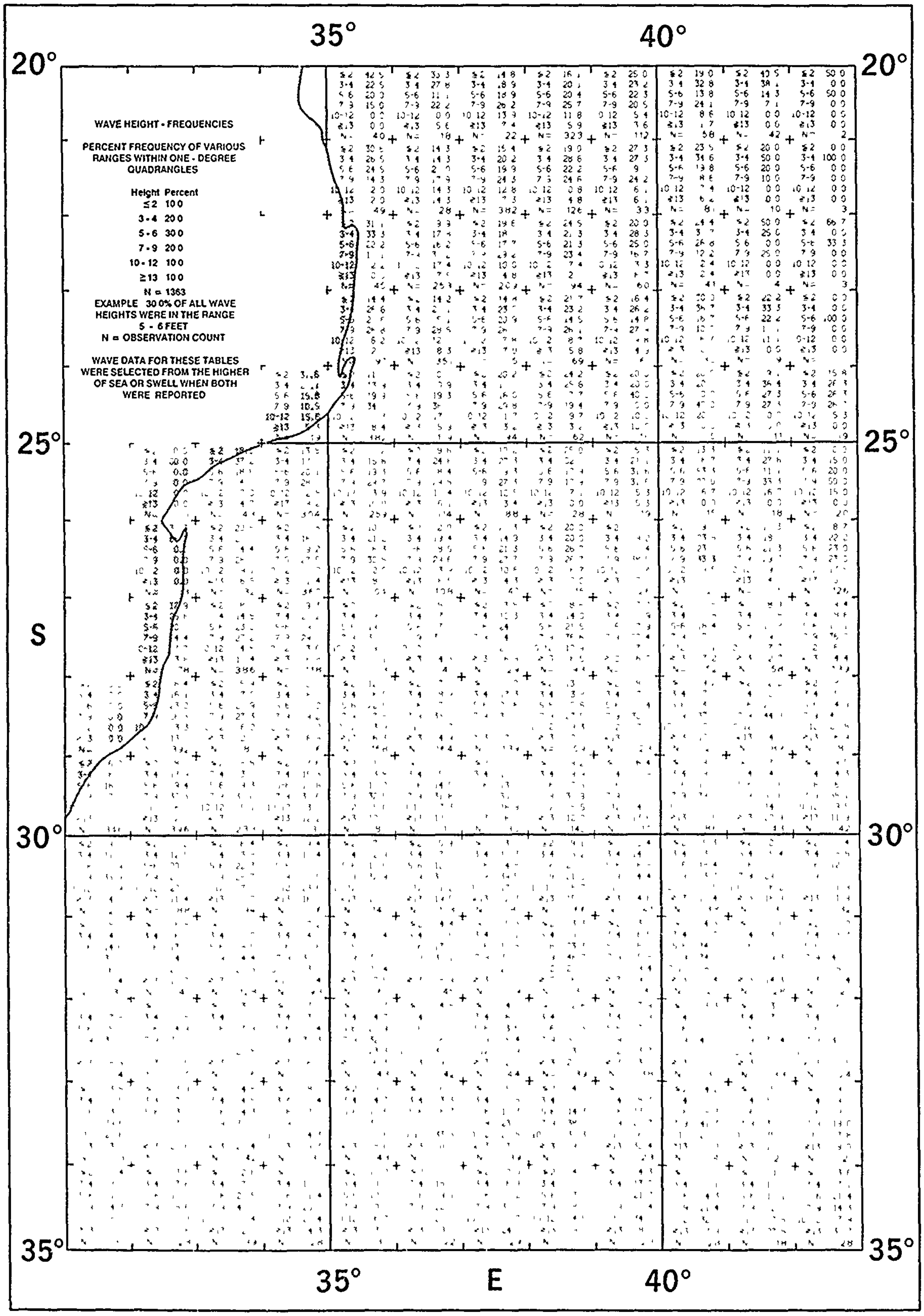
Wave Height




45°
50°
55°
5°
10°
S
15°
20°
E

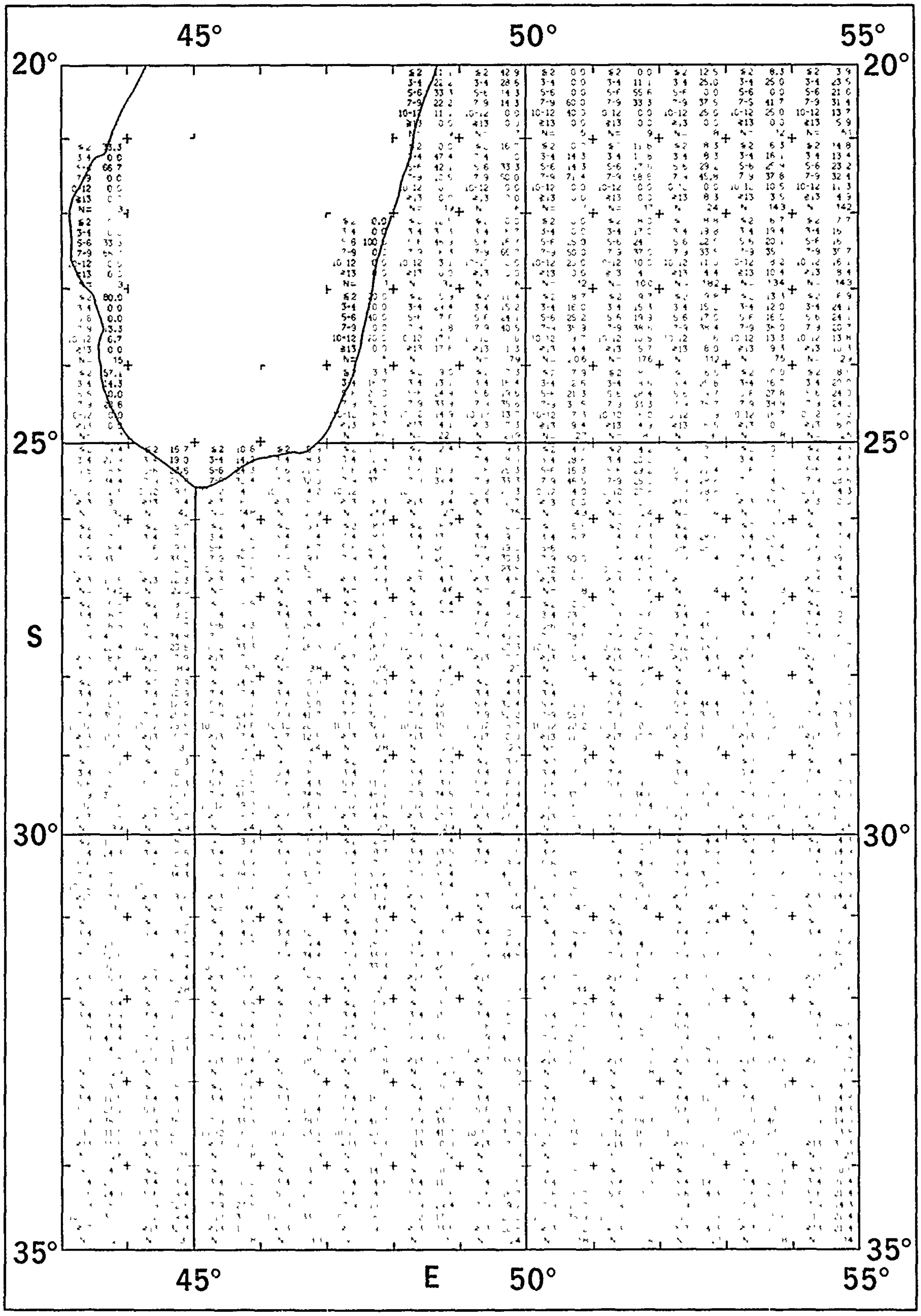
May

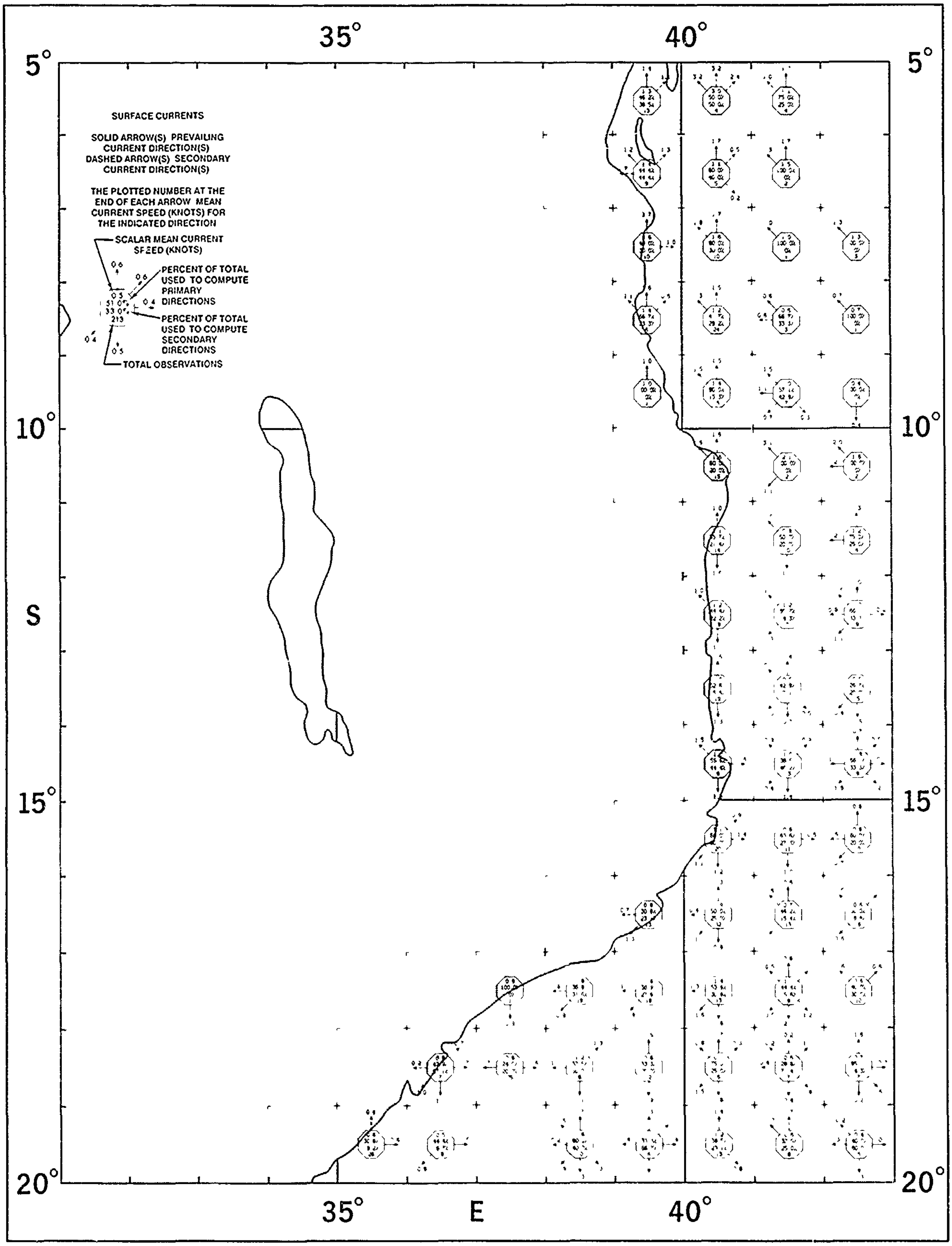
Wave Height

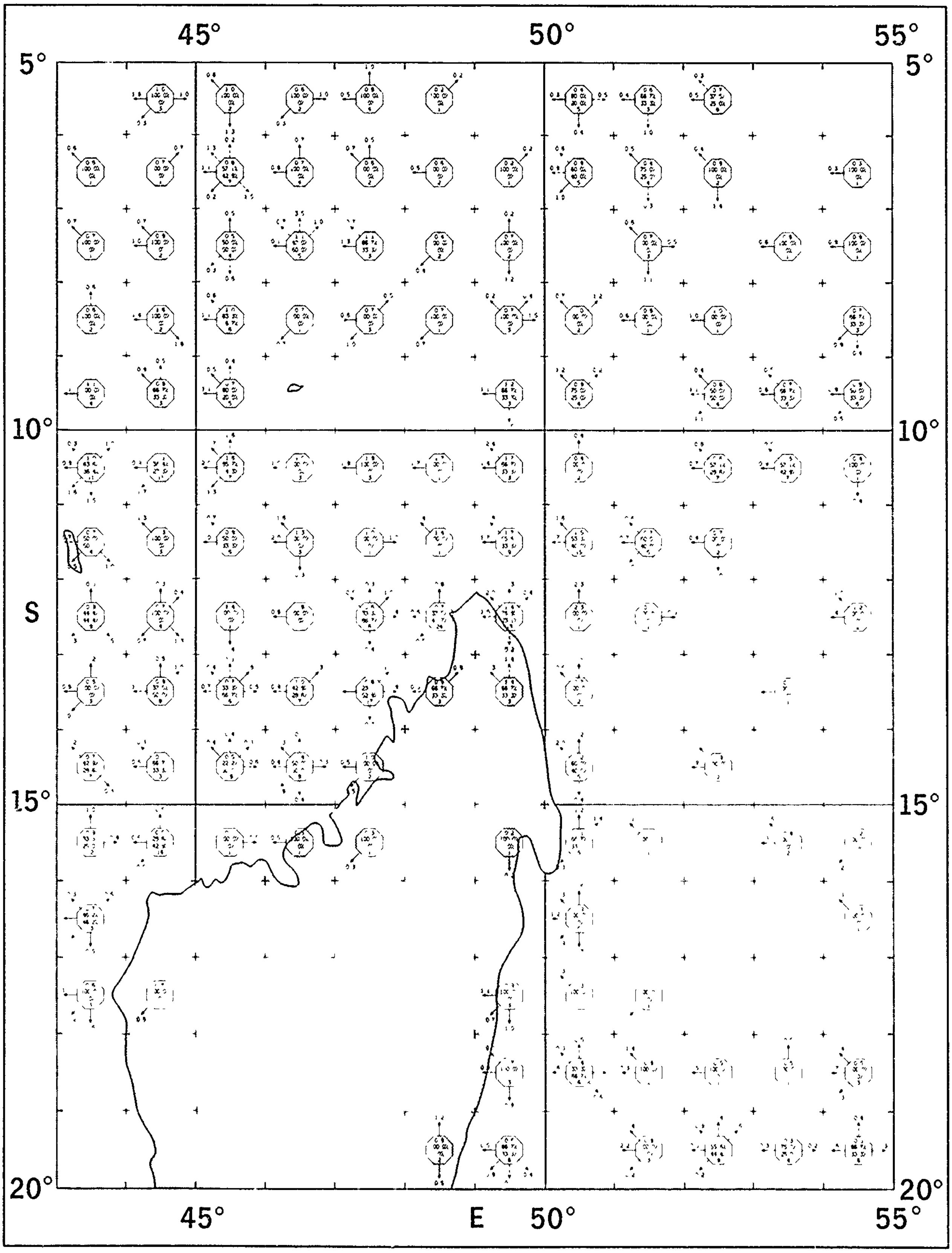


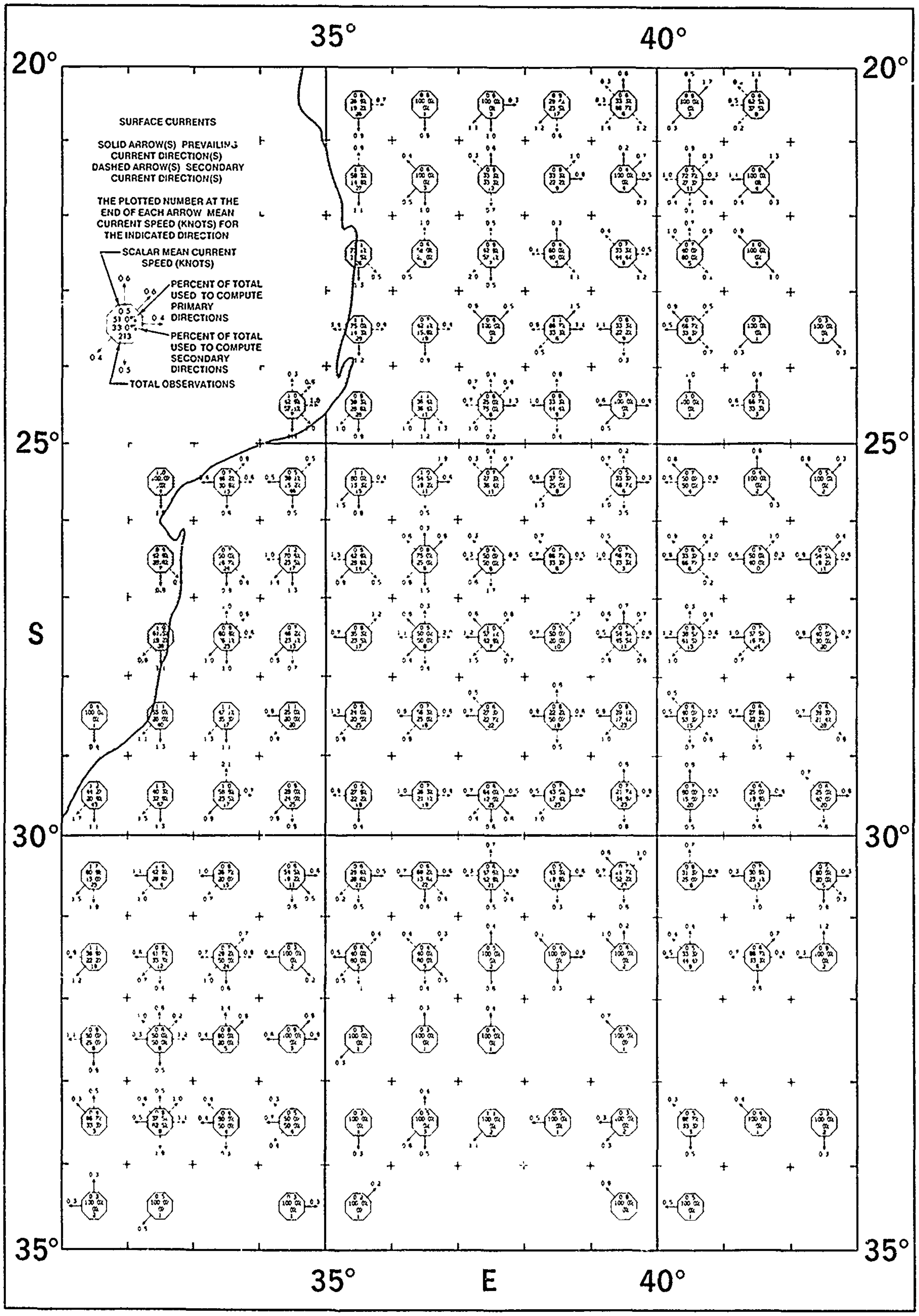
May

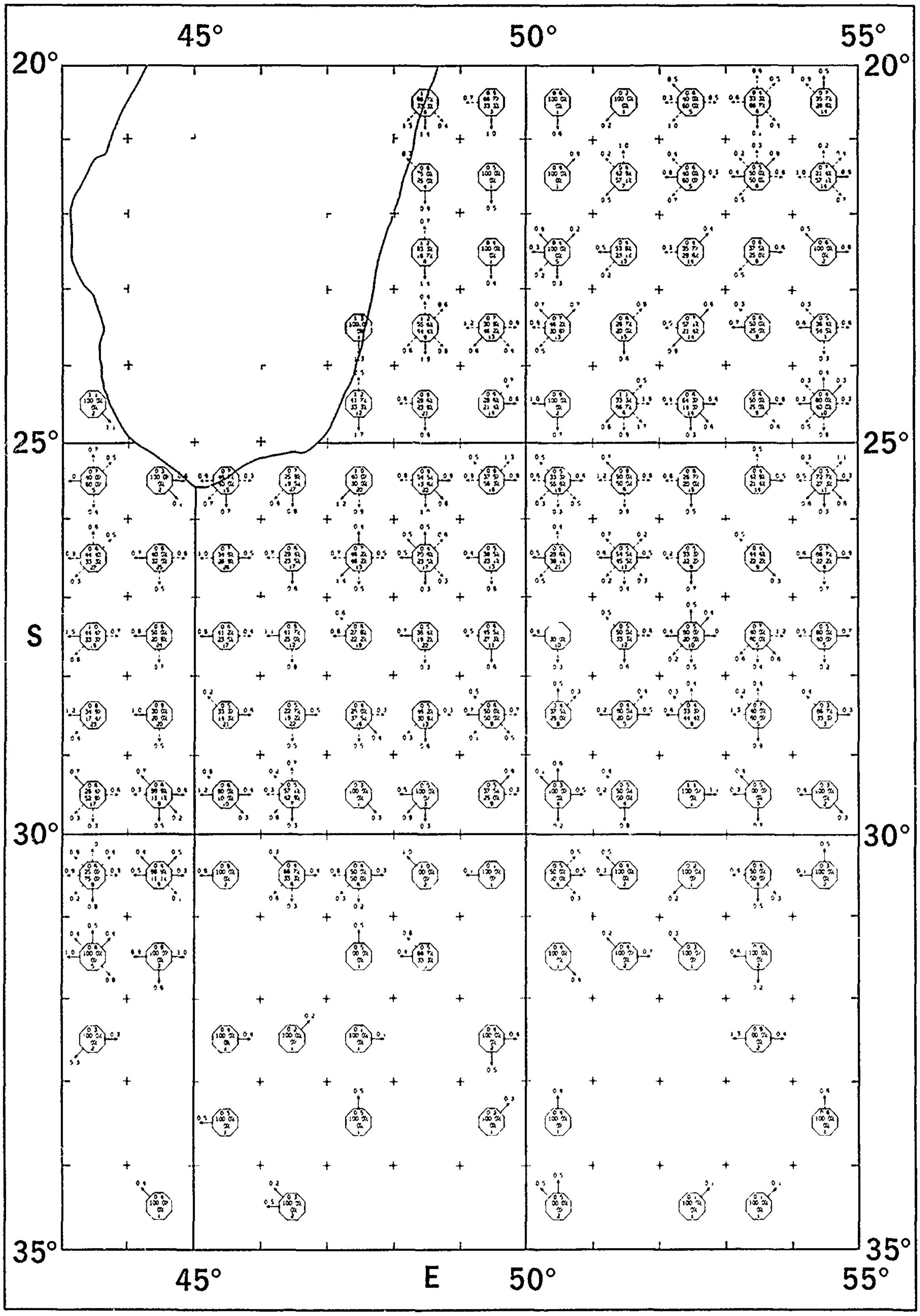
Wave Height

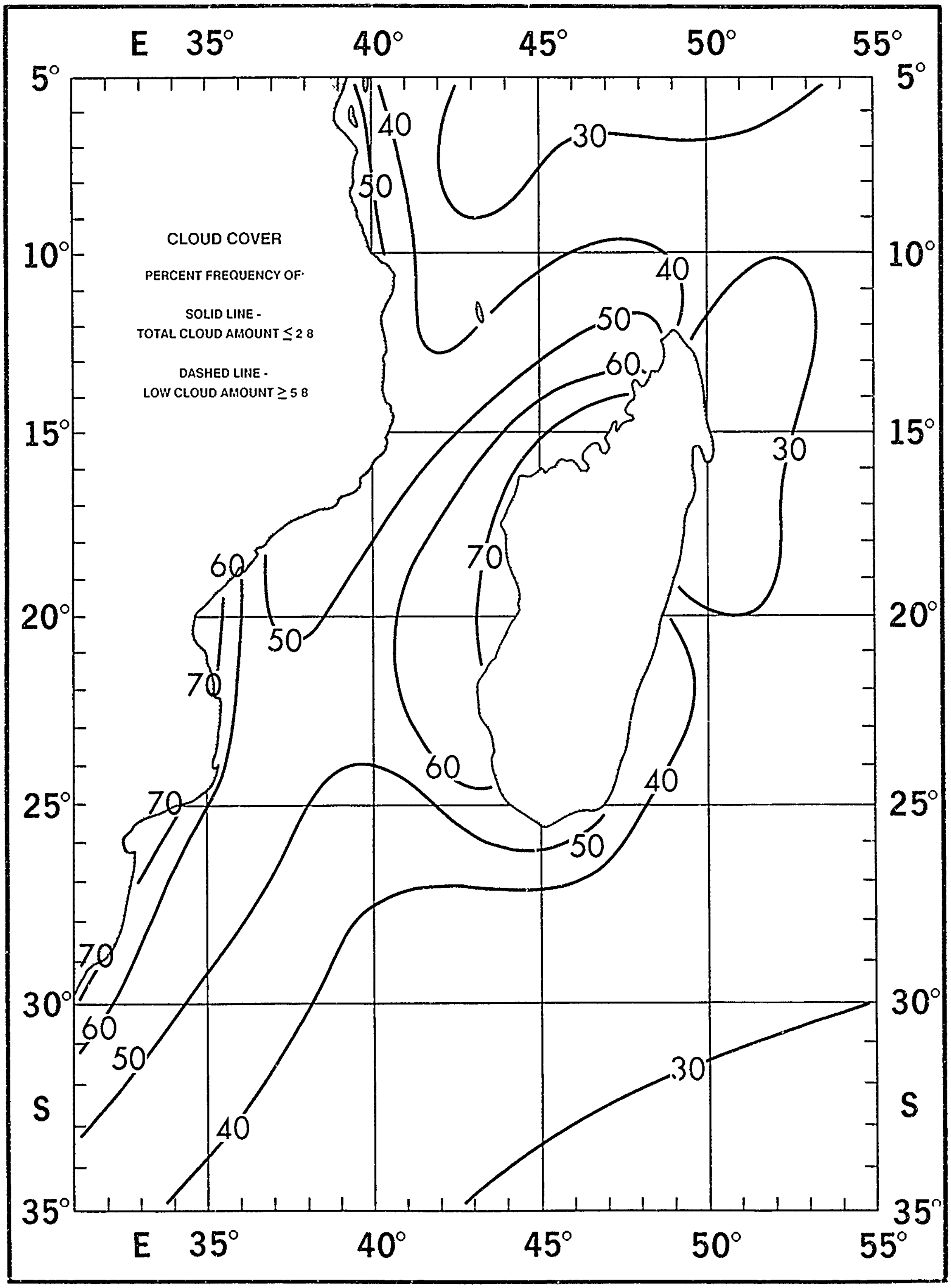


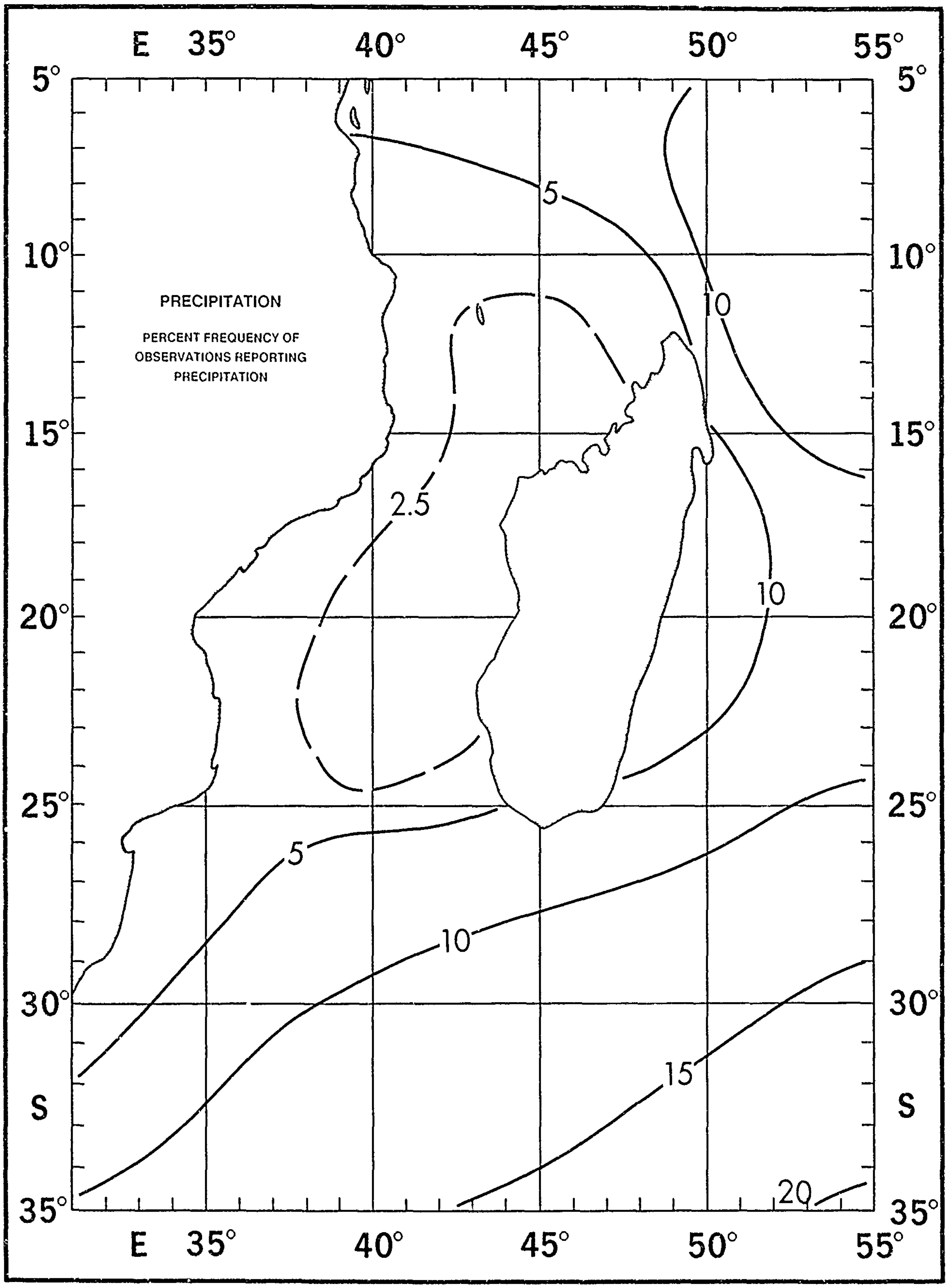

35°
40°
5°
5°
10°
10°
S
15°
15°
20°
20°
35°
E
40°
SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS

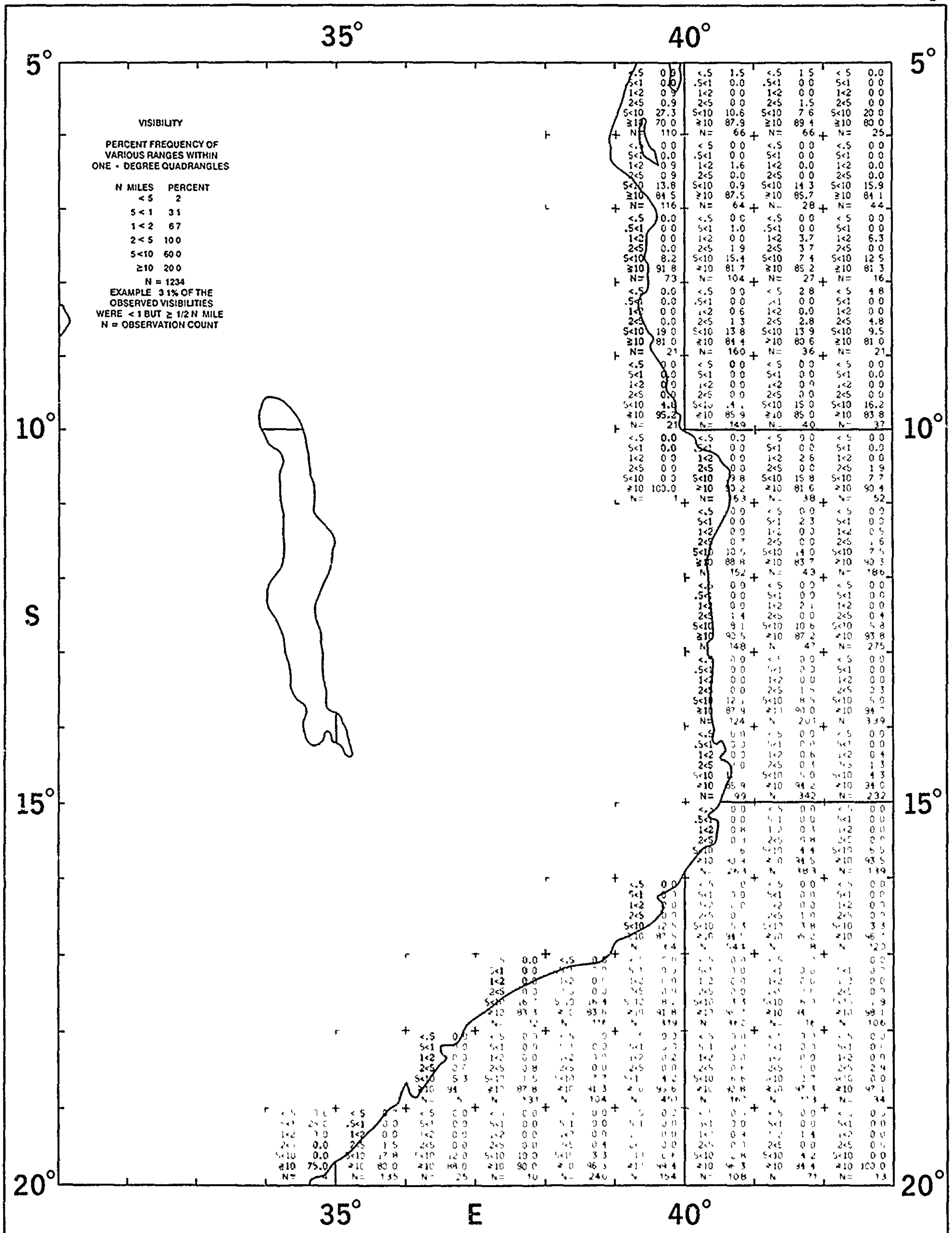

45°
50°
55°
5°
10°
S
15°
20°
E


35°
40°
20°
20°
SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS
25°
25°
S
30°
30°
35°
35°
35°
E
40°


45°
50°
55°
20°
20°
25°
25°
S
30°
30°
35°
35°
45°
E
50°
55°


E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° 35°
S
CLOUD COVER
PERCENT FREQUENCY OF·
SOLID LINE -
TOTAL CLOUD AMOUNT ≤ 2 8
DASHED LINE -
LOW CLOUD AMOUNT ≥ 5 8
30 40 50 60 70

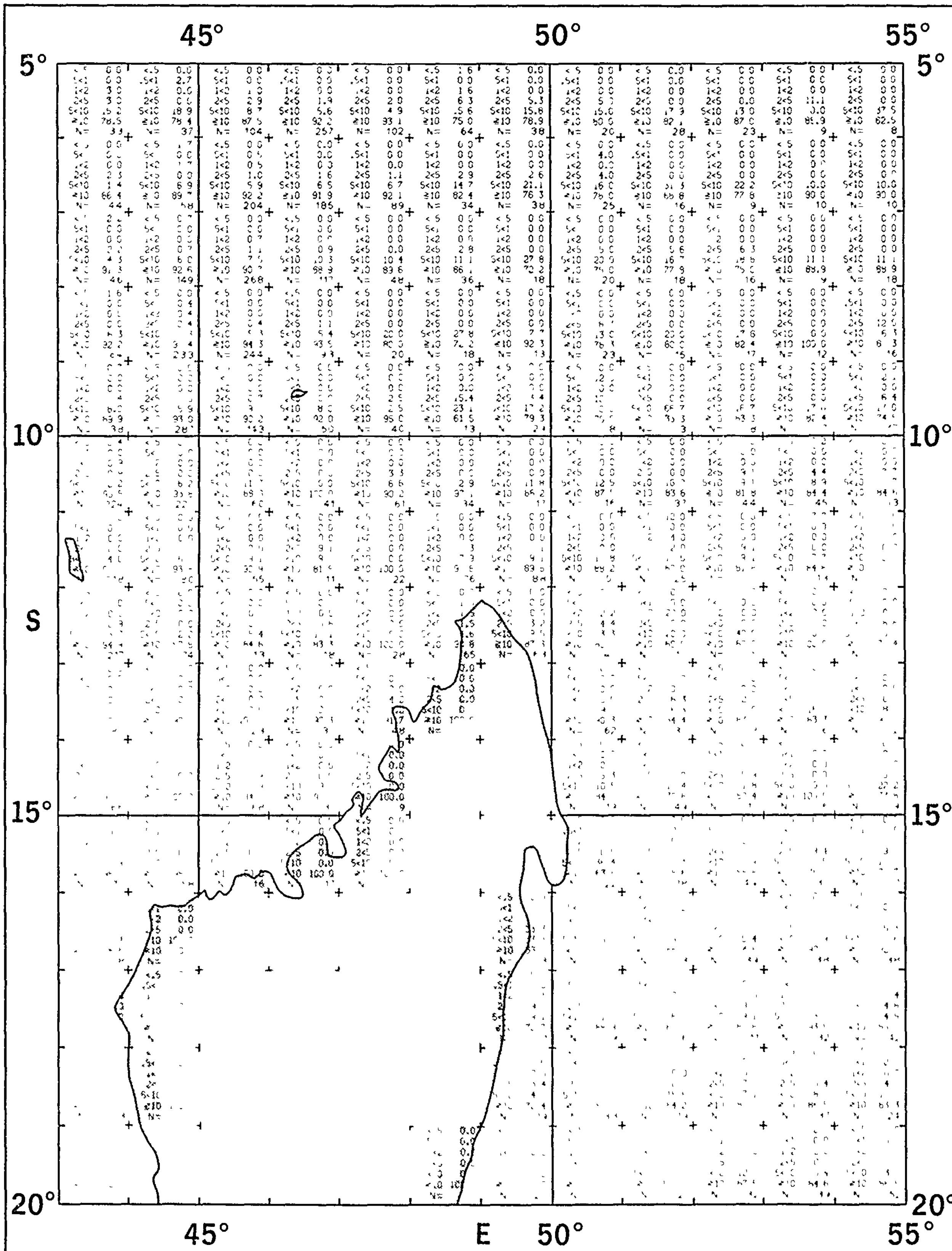

E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
PRECIPITATION
PERCENT FREQUENCY OF OBSERVATIONS REPORTING PRECIPITATION
5
10
2.5
10
5
10
15
20

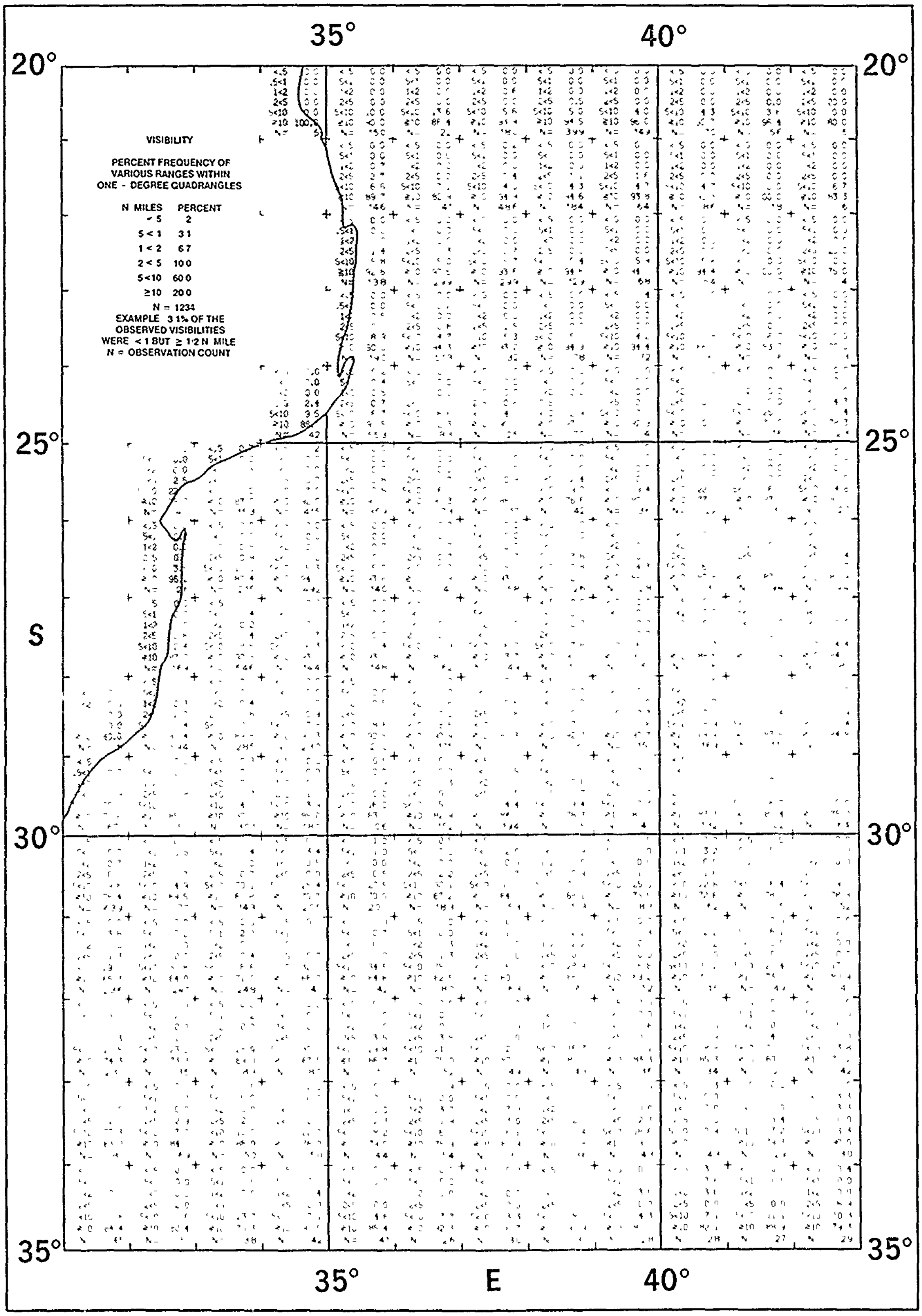


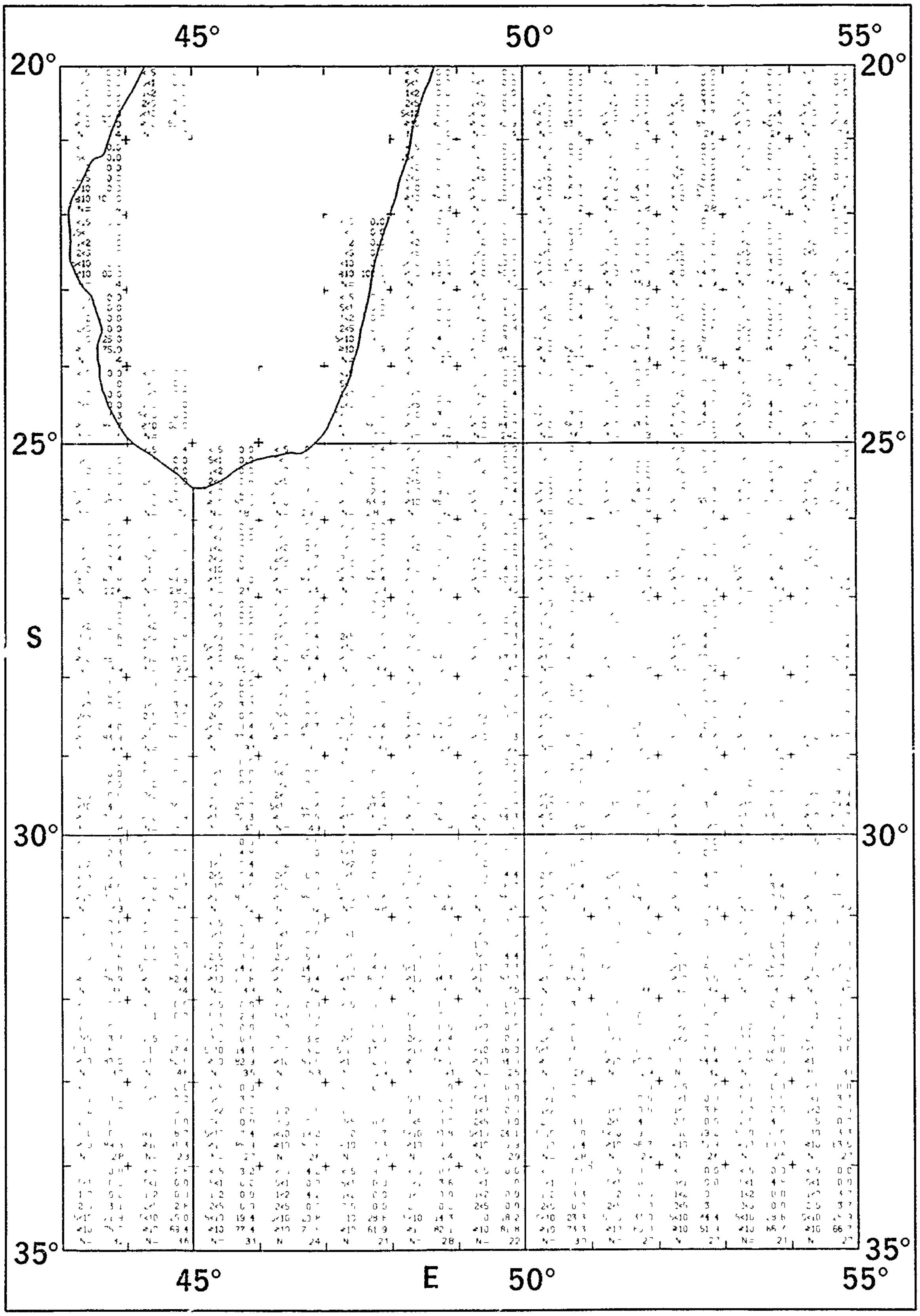
35°
40°
5°
10°
15°
20°
S
E
VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
< .5 2
.5 < 1 3.1
1 < 2 6.7
2 < 5 10.0
5 < 10 60.0
≥10 20.0
N = 1234
EXAMPLE 3.1% OF THE OBSERVED VISIBILITIES WERE < 1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT

June

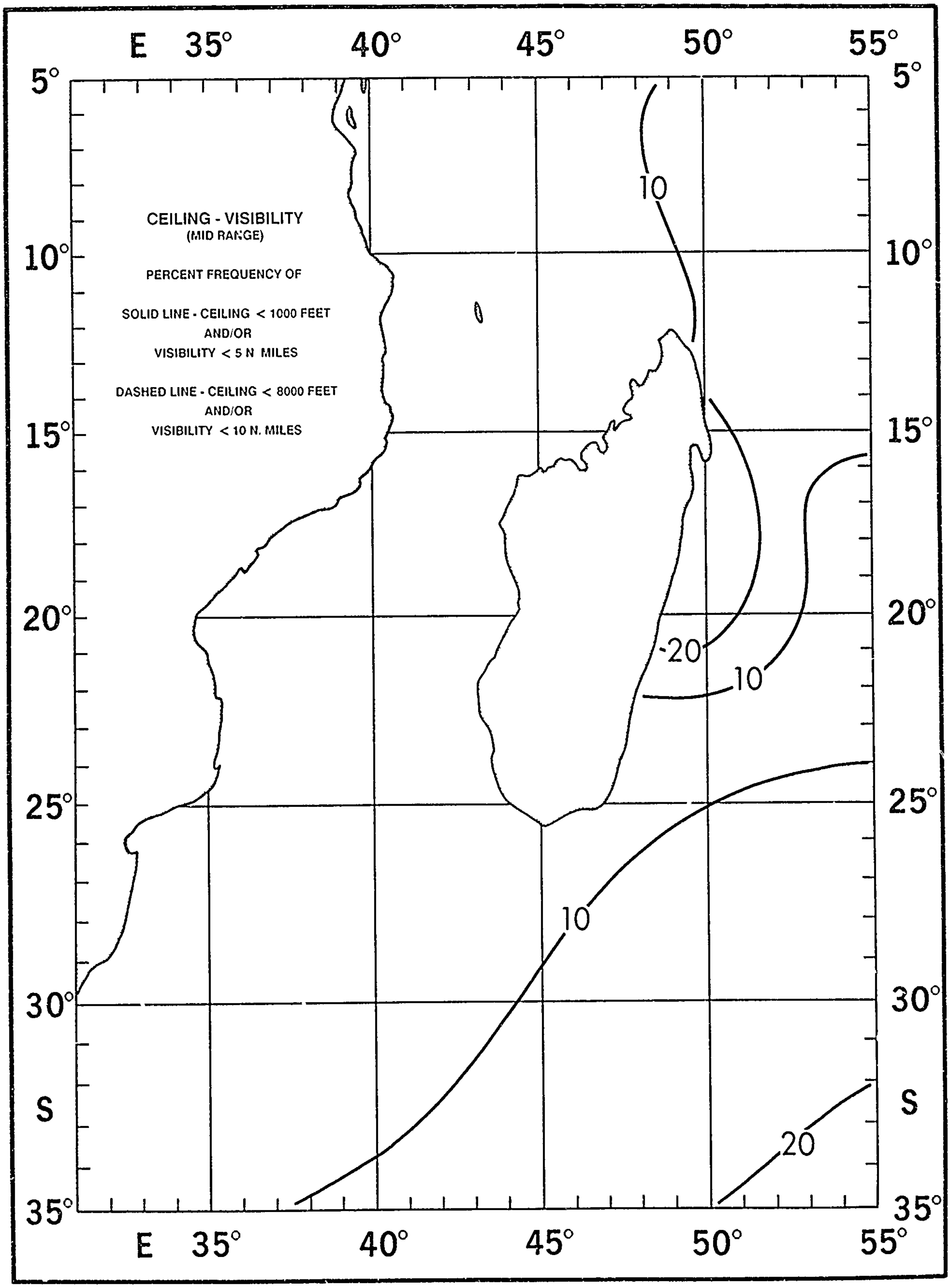
Visibility

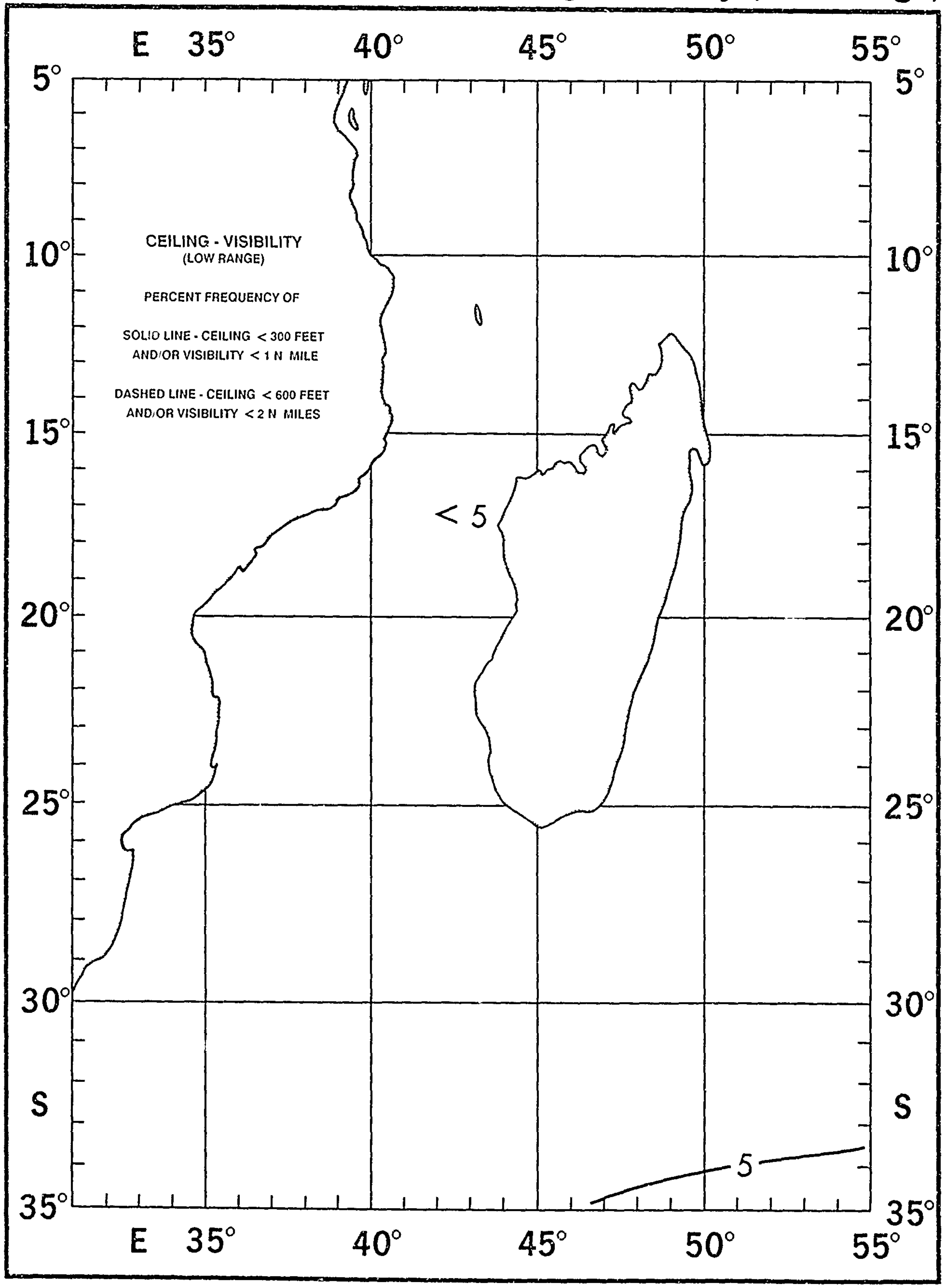



35°
40°
20°
25°
30°
35°
S
E
VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
< 5 2
5 < 1 3 1
1 < 2 6 7
2 < 5 10 0
5 < 10 60 0
≥ 10 20 0
N = 1234
EXAMPLE 3 1% OF THE OBSERVED VISIBILITIES WERE < 1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT


45°
50°
55°
20°
25°
30°
35°
S
E

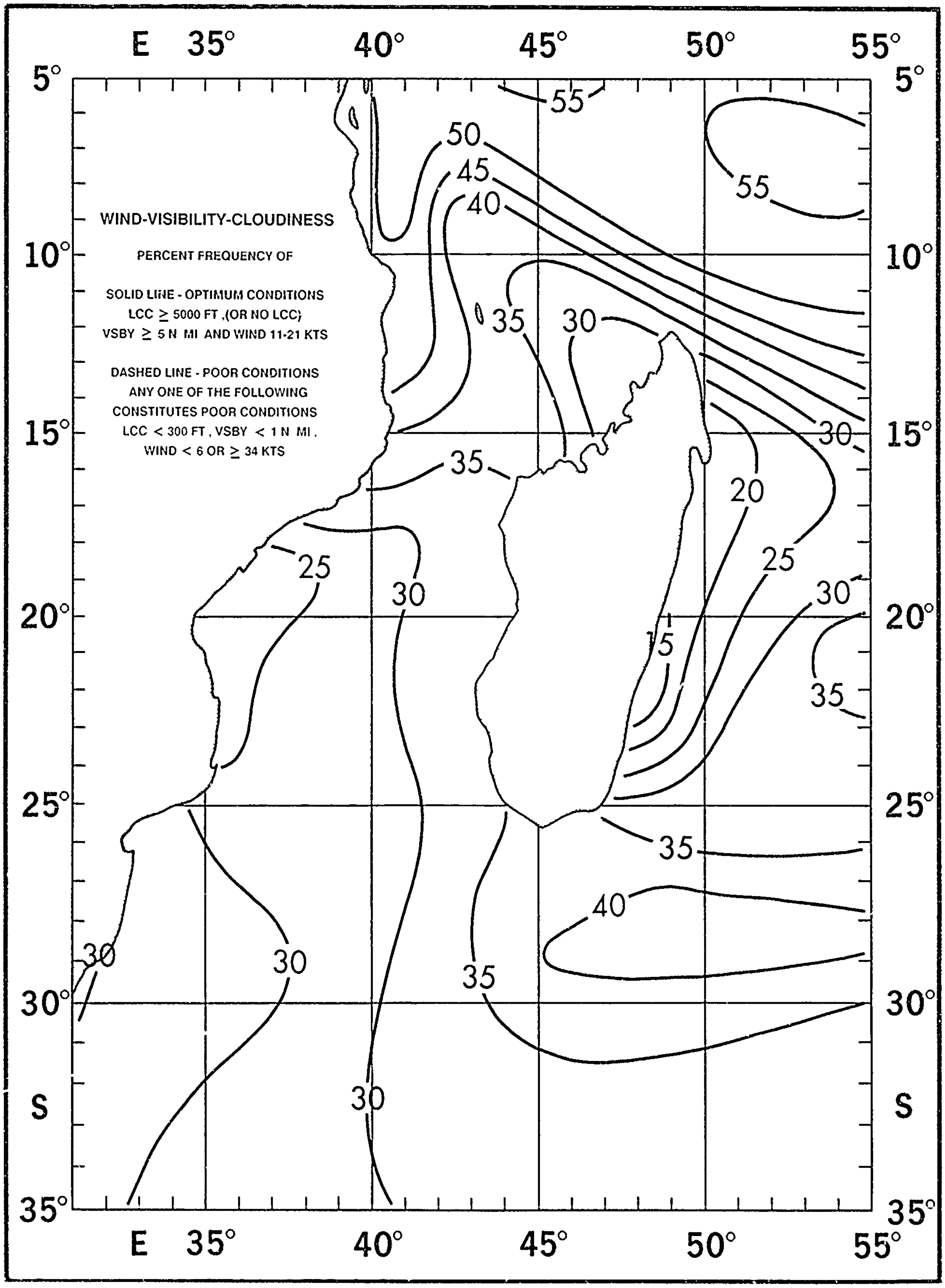
Ceiling - Visibility (Mid Range)




E 35°
40°
45°
50°
55°
5°
10°
15°
20°
25°
30°
S
35°
CEILING - VISIBILITY
(LOW RANGE)
PERCENT FREQUENCY OF
SOLID LINE - CEILING < 300 FEET
AND/OR VISIBILITY < 1 N MILE
DASHED LINE - CEILING < 600 FEET
AND/OR VISIBILITY < 2 N MILES
< 5
5

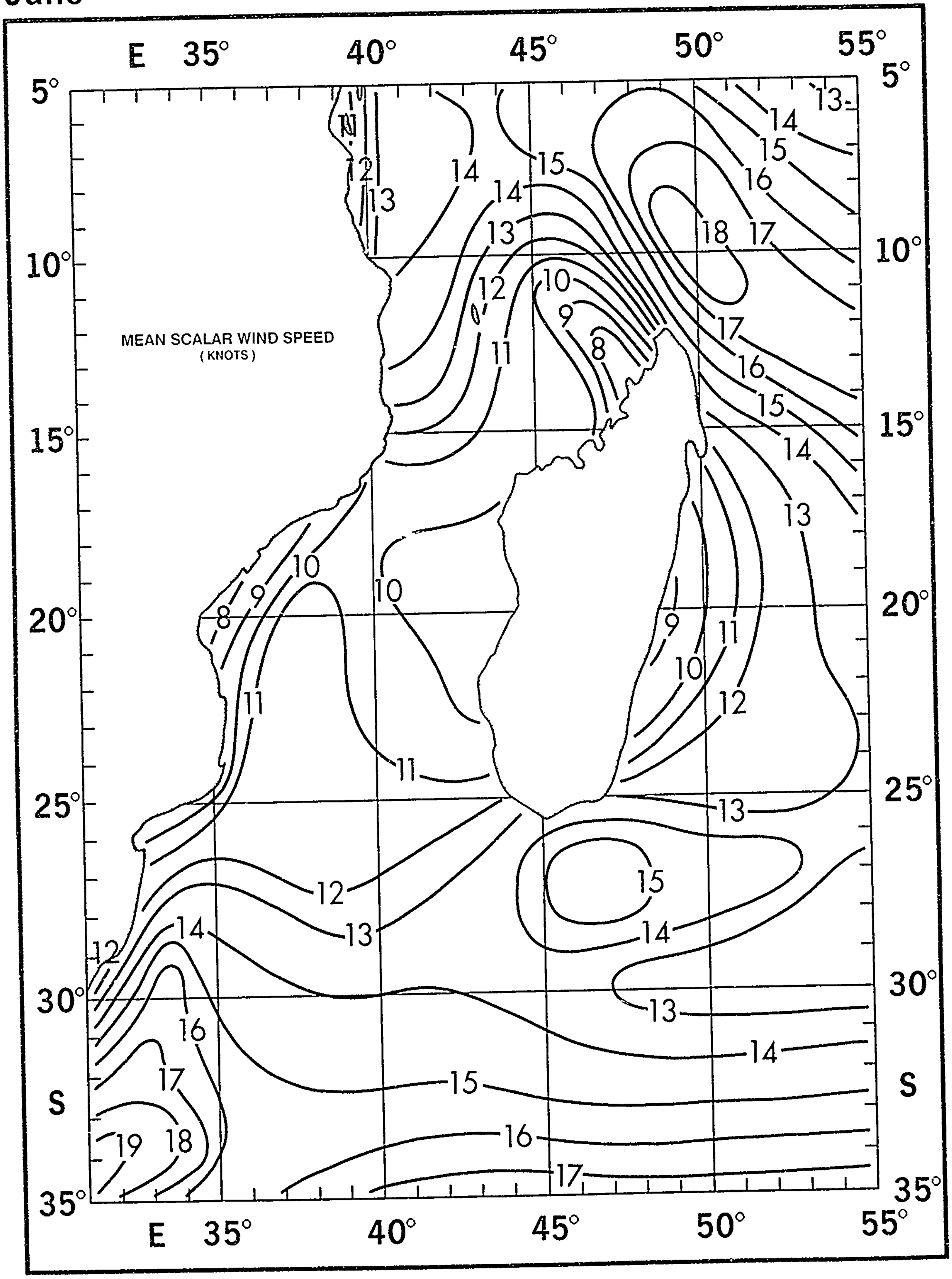
June

Wind - Visibility - Cloudiness



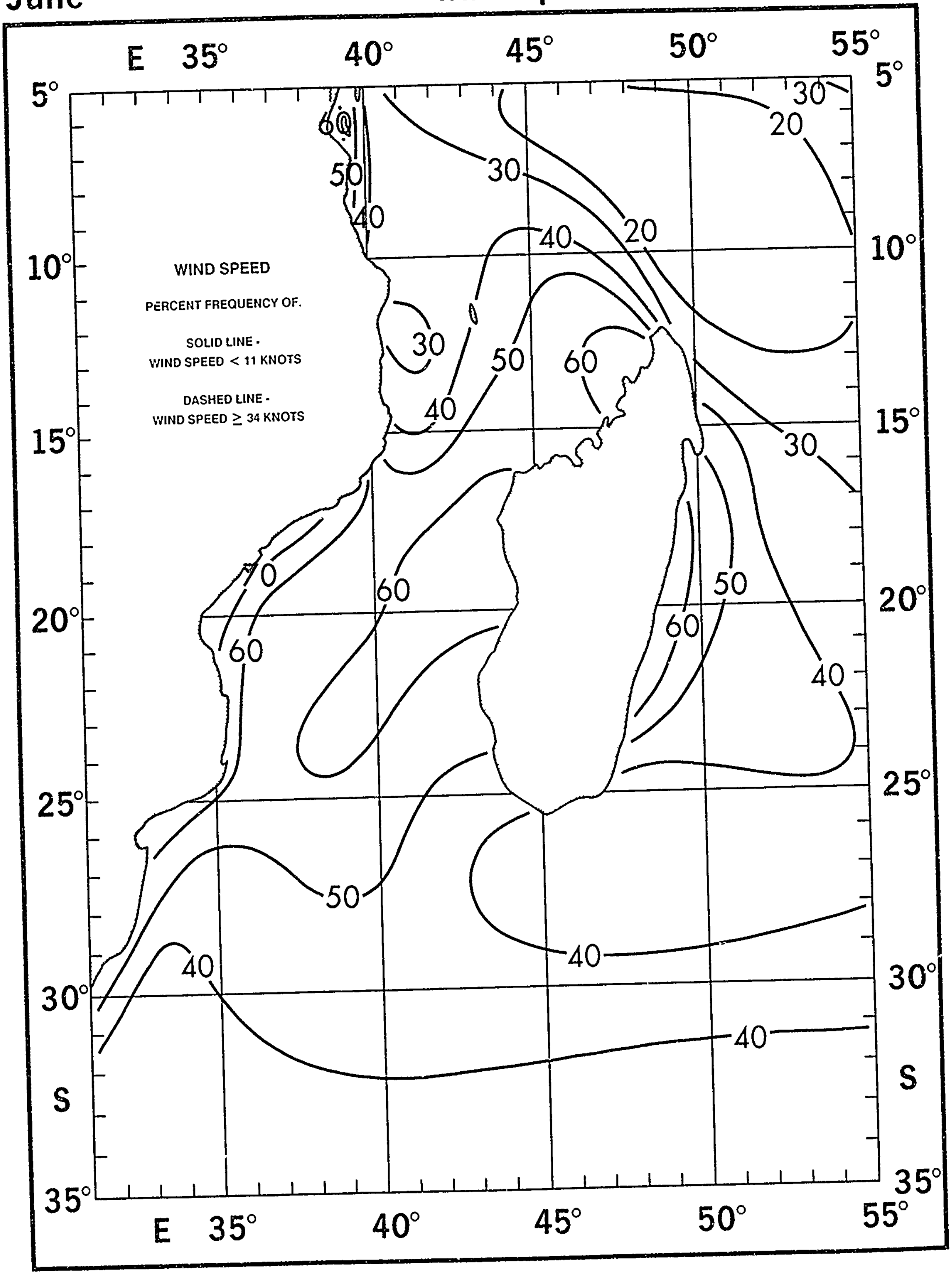
June

Mean Scalar Wind Speed



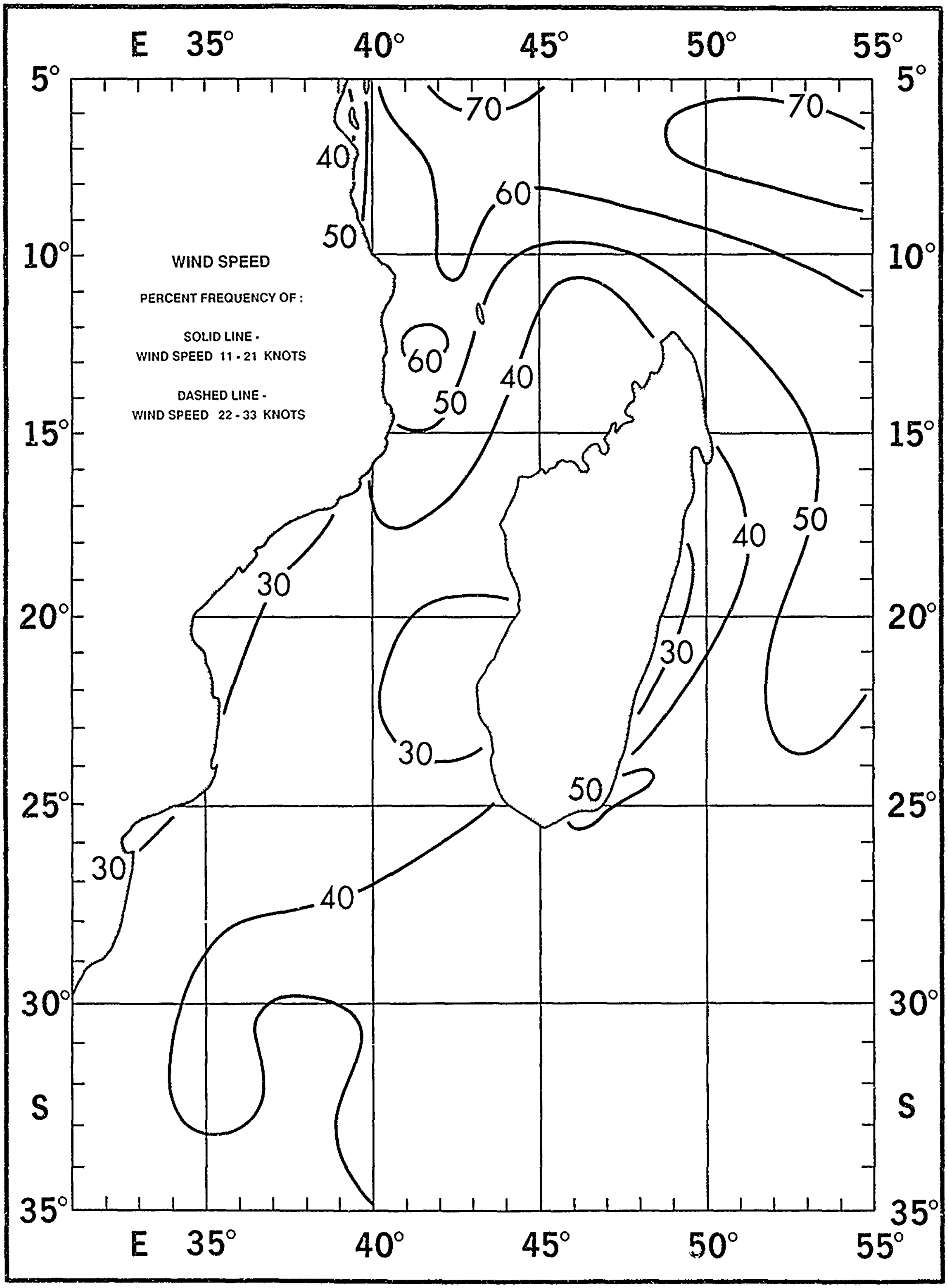
June

Wind Speed <11 and ≥34 Knots

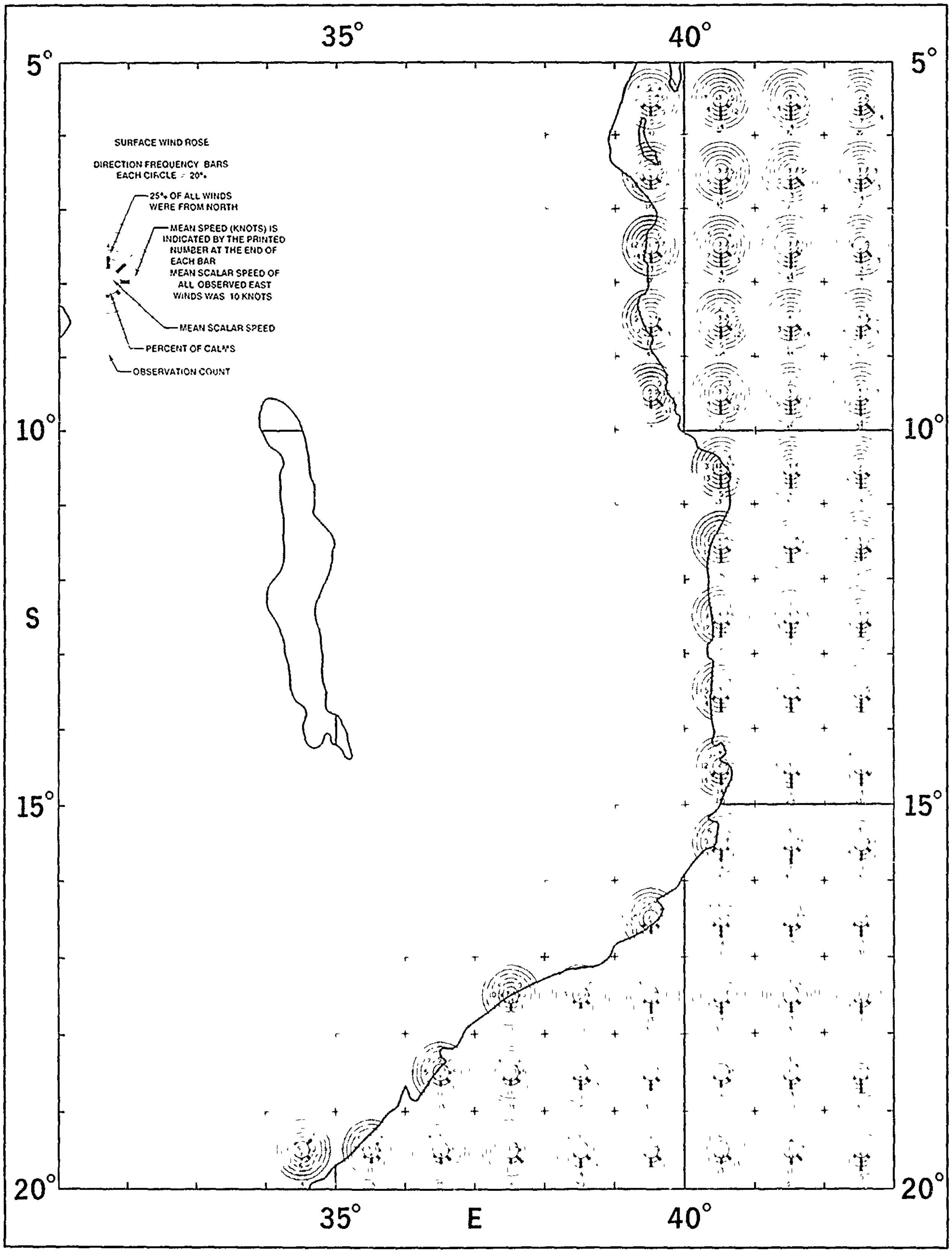


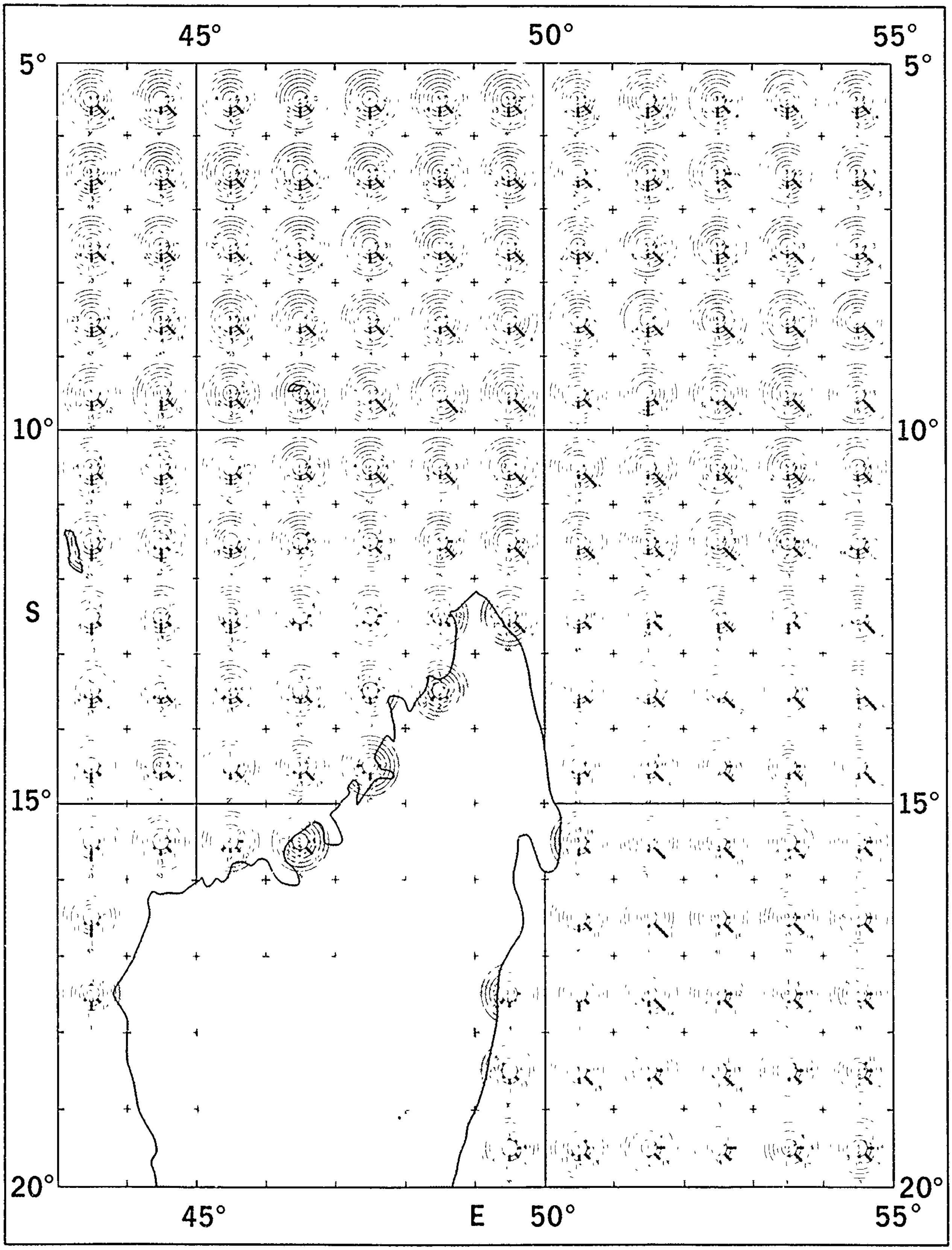
June

Wind Speed 11 - 21 and 22 - 33 Knots



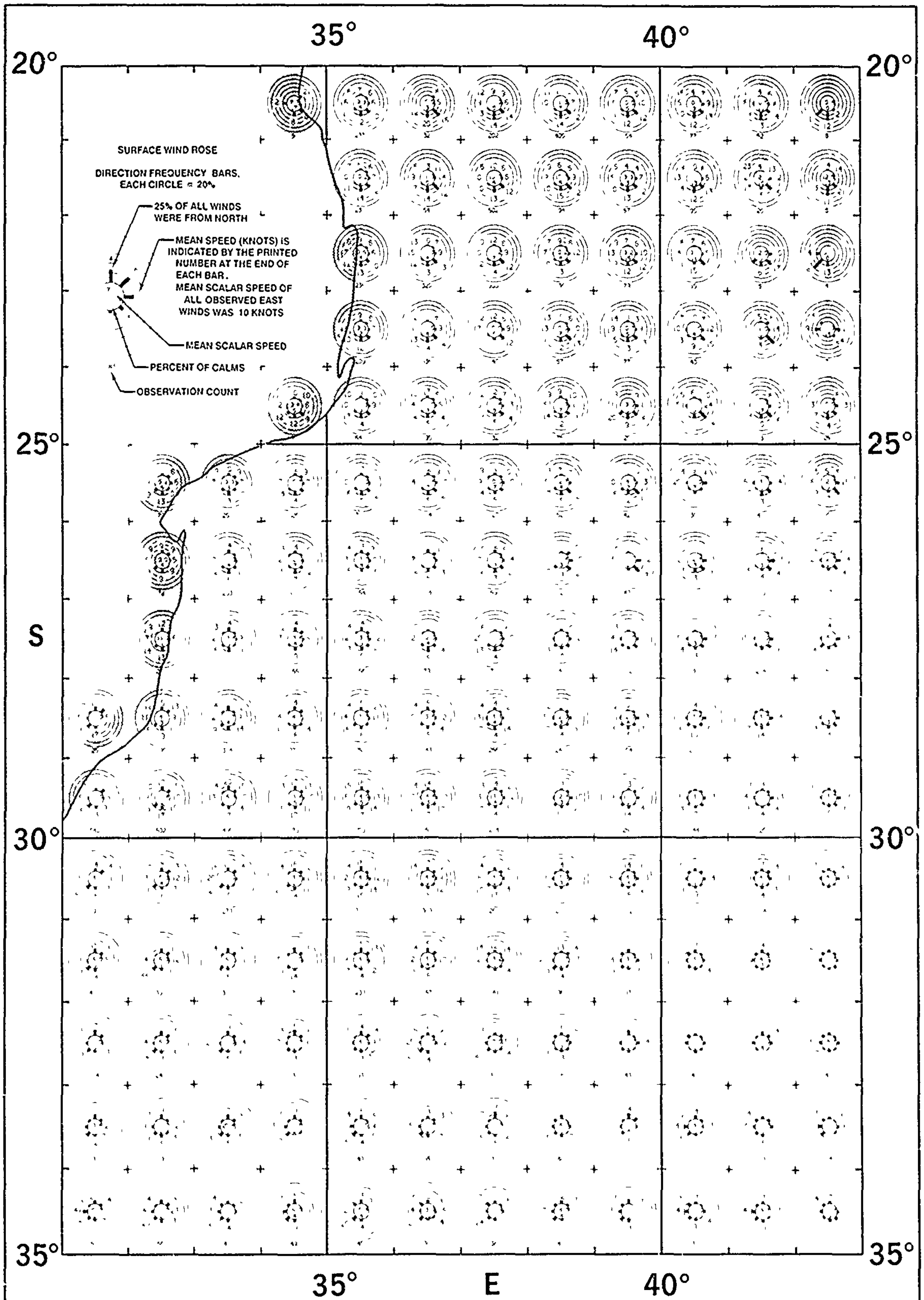
Surface Wind Roses

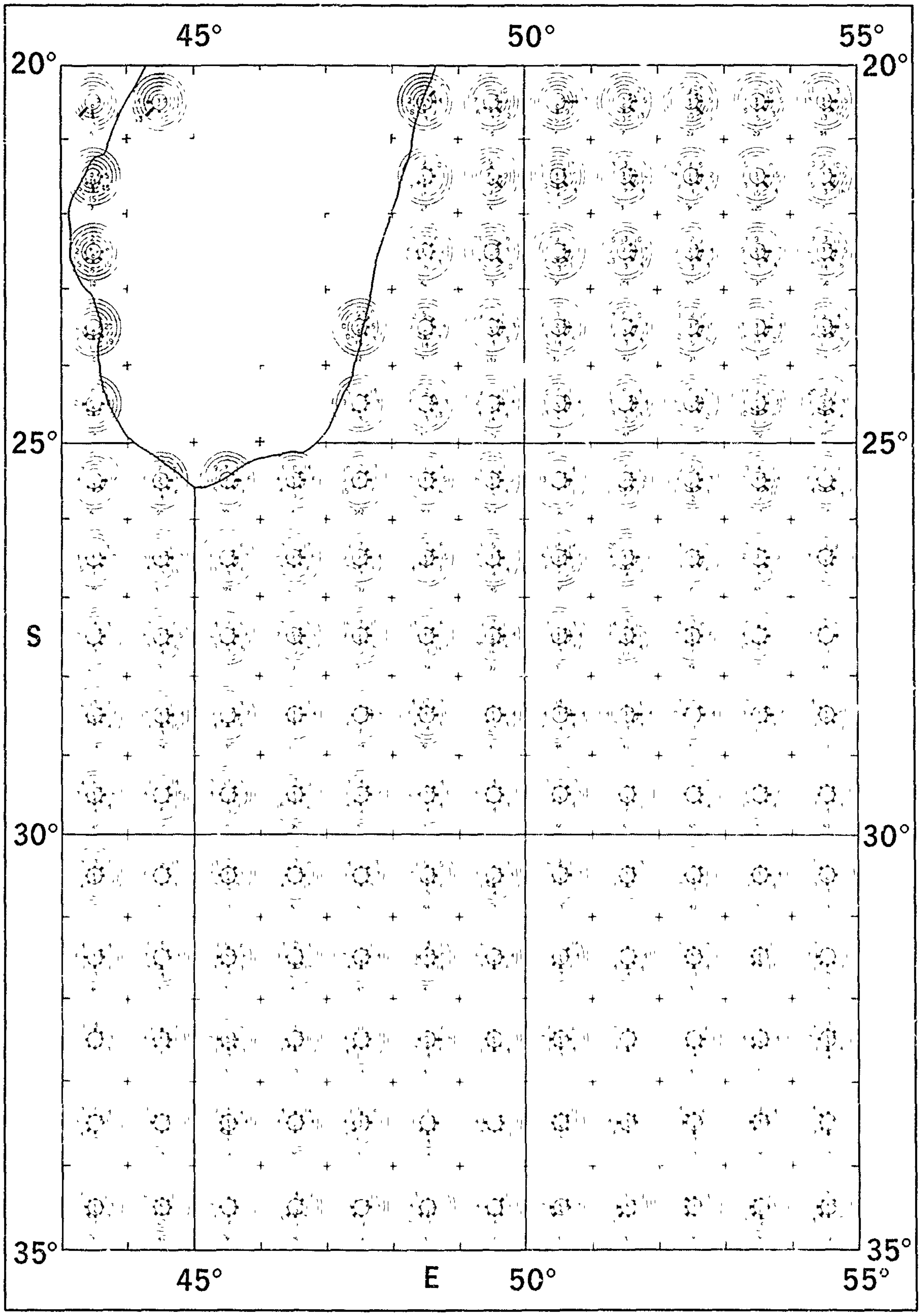


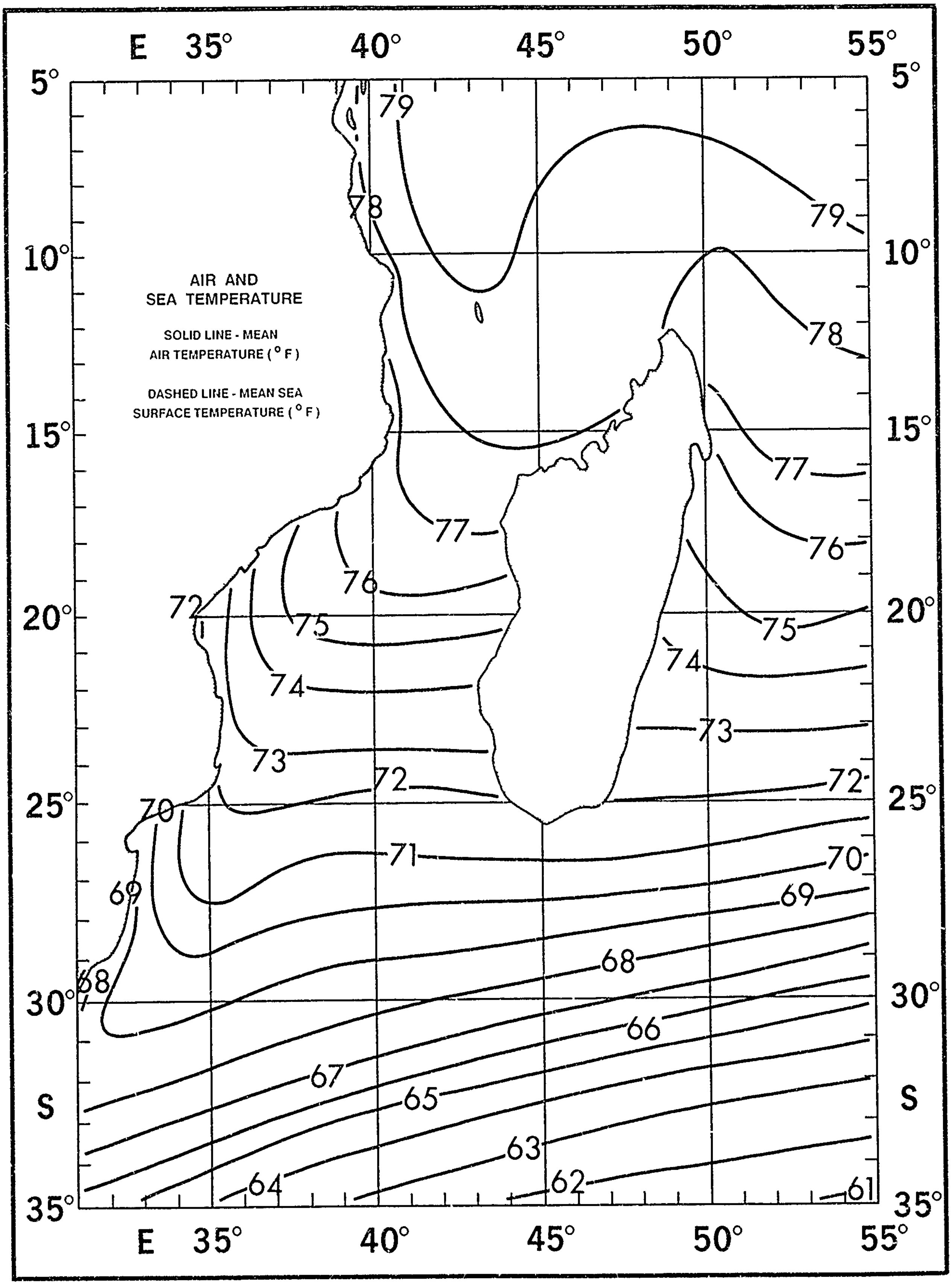

45°
50°
55°
5°
10°
15°
20°
S
E

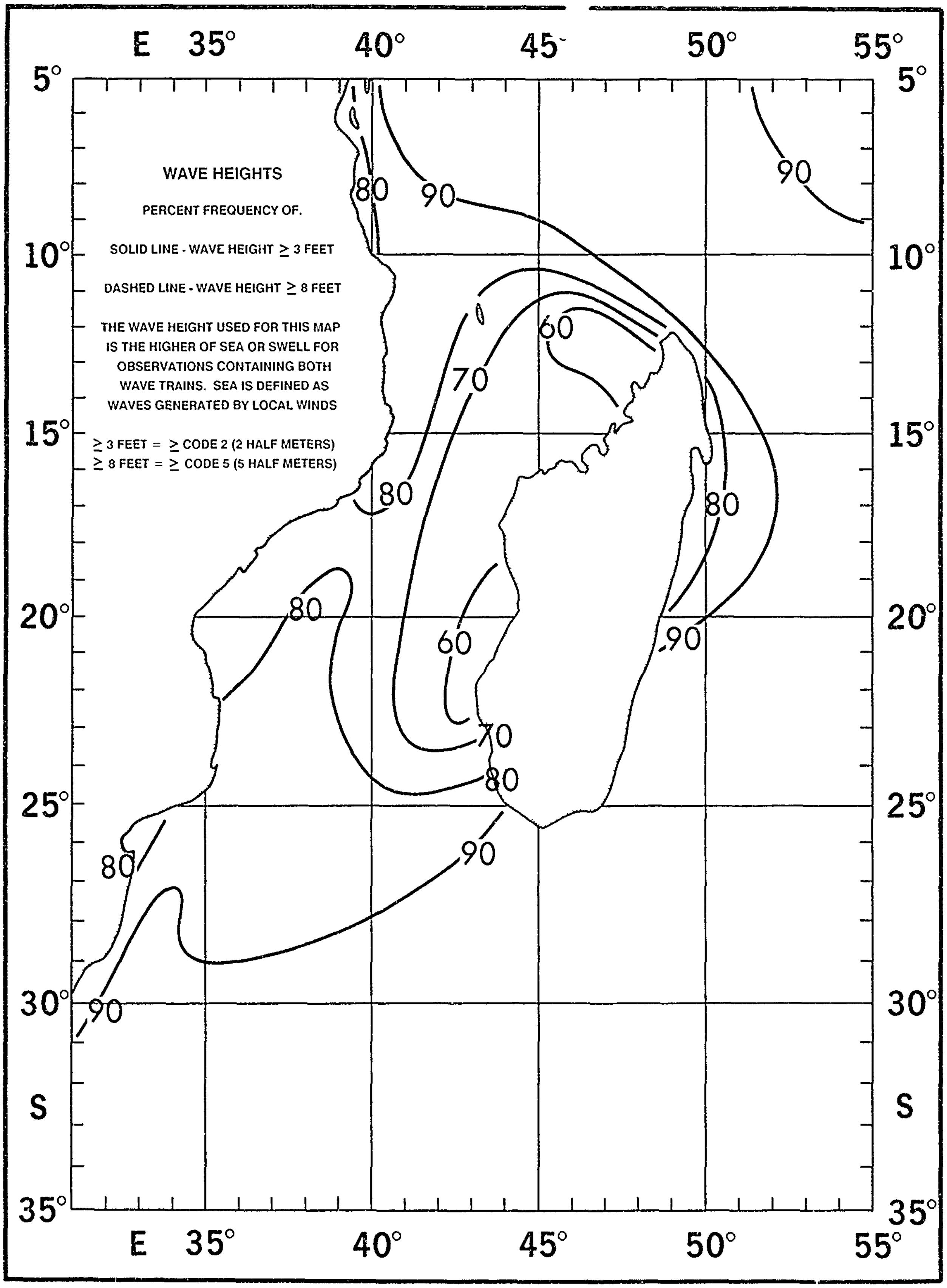
June

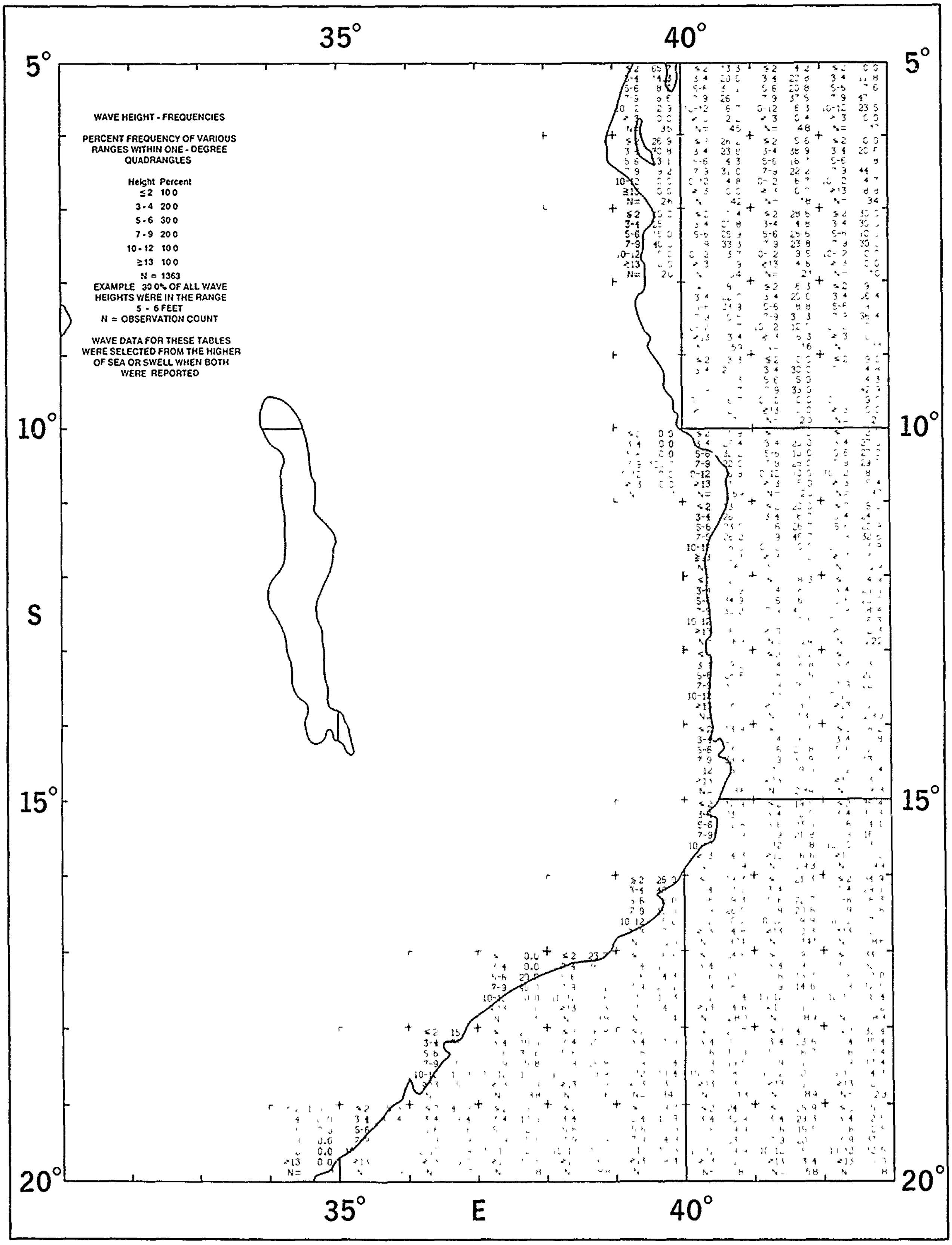
Surface Wind Roses



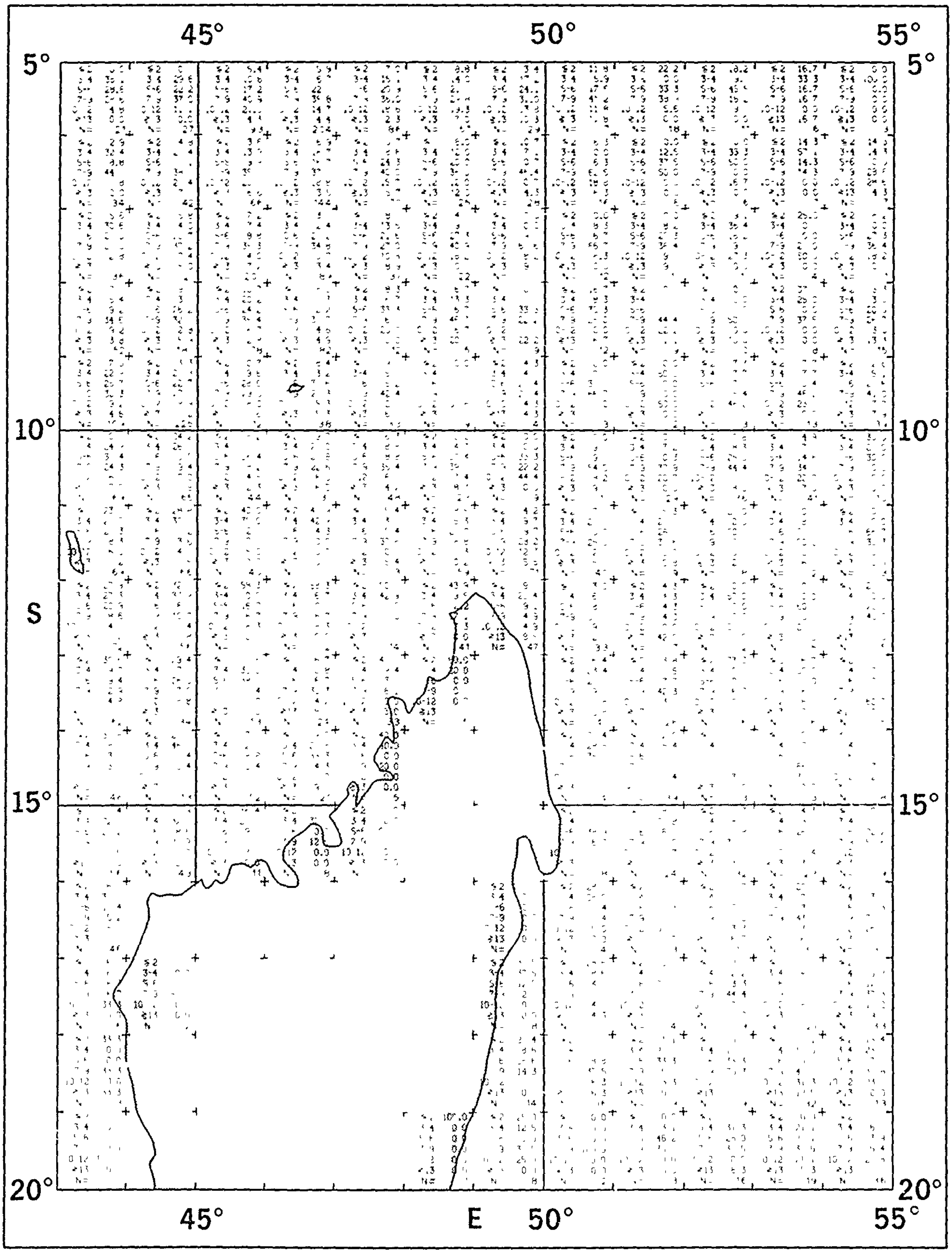

45°
50°
55°
20°
25°
30°
35°
S
E

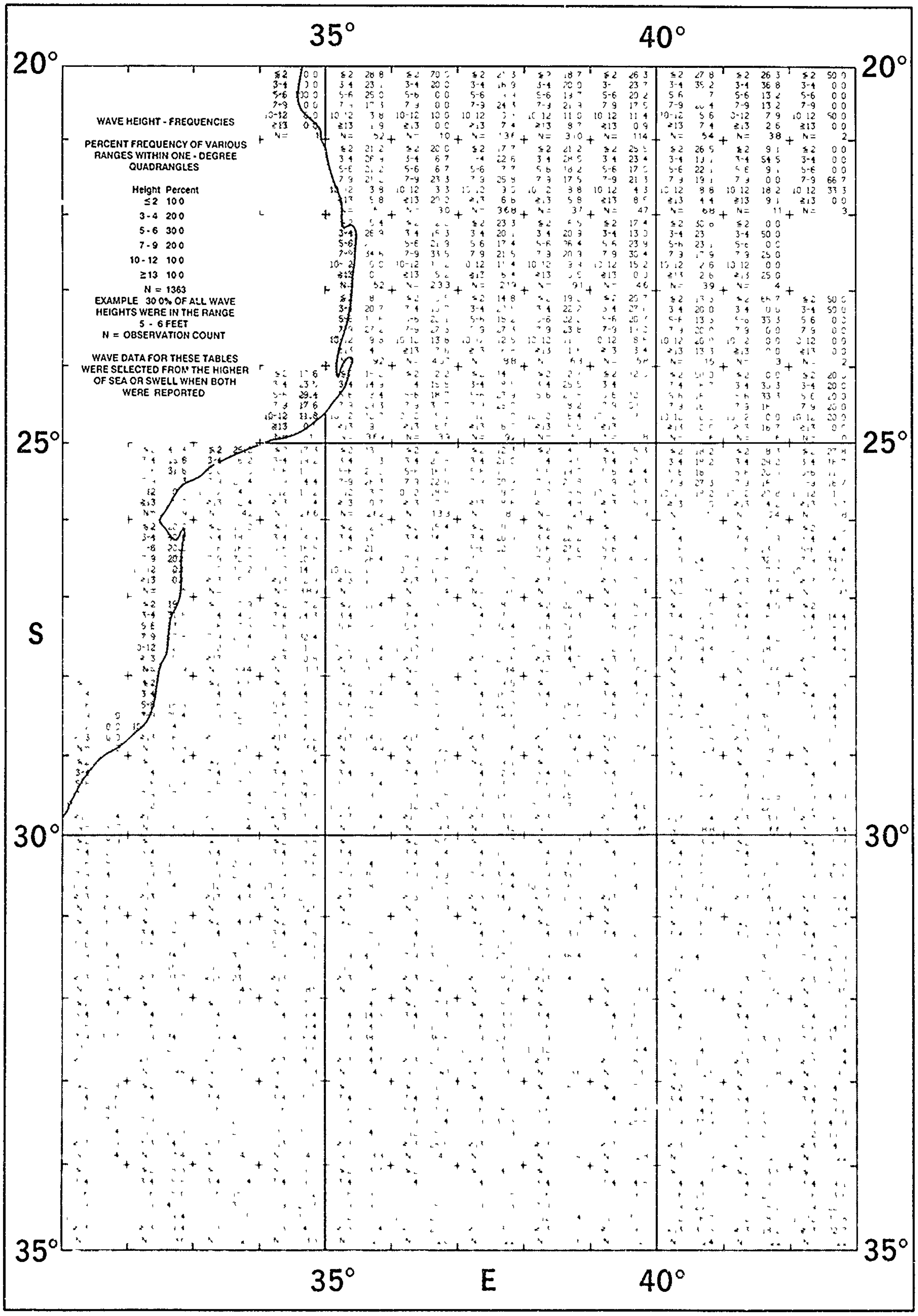

AIR AND SEA TEMPERATURE
SOLID LINE - MEAN AIR TEMPERATURE (° F)
DASHED LINE - MEAN SEA SURFACE TEMPERATURE (° F)
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
79
78
77
76
75
74
73
72
71
70
69
68
67
66
65
64
63
62
61


E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
WAVE HEIGHTS
PERCENT FREQUENCY OF.
SOLID LINE - WAVE HEIGHT ≥ 3 FEET
DASHED LINE - WAVE HEIGHT ≥ 8 FEET
THE WAVE HEIGHT USED FOR THIS MAP IS THE HIGHER OF SEA OR SWELL FOR OBSERVATIONS CONTAINING BOTH WAVE TRAINS. SEA IS DEFINED AS WAVES GENERATED BY LOCAL WINDS
≥ 3 FEET = ≥ CODE 2 (2 HALF METERS)
≥ 8 FEET = ≥ CODE 5 (5 HALF METERS)
80
90
90
60
70
80
80
80
60
90
70
80
90
80
90

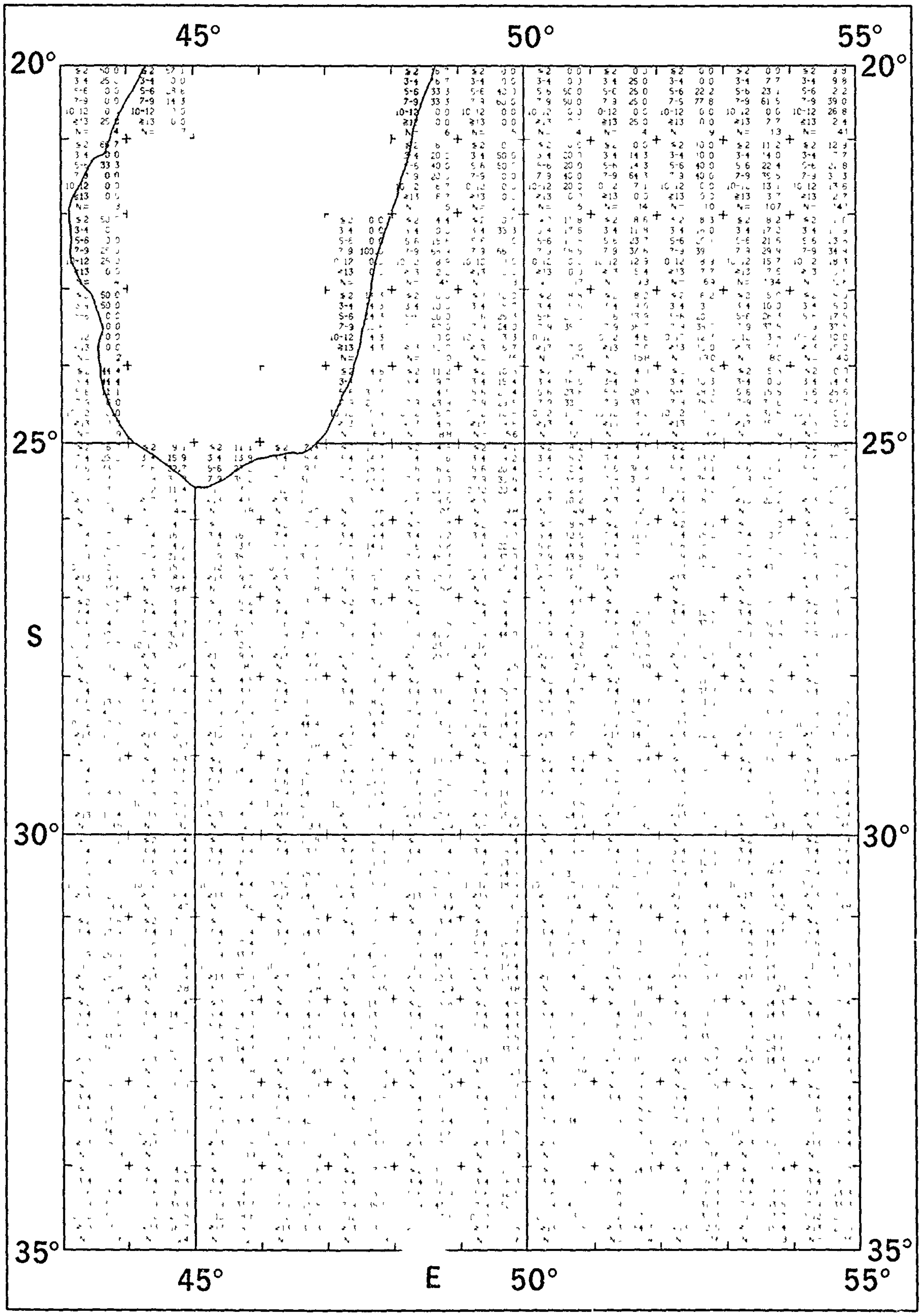

35°
40°
5°
10°
15°
20°
S
E
WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
Height Percent
≤2 10.0
3-4 20.0
5-6 30.0
7-9 20.0
10-12 10.0
≥13 10.0
N = 1363
EXAMPLE 30.0% OF ALL WAVE HEIGHTS WERE IN THE RANGE 5 - 6 FEET
N = OBSERVATION COUNT
WAVE DATA FOR THESE TABLES WERE SELECTED FROM THE HIGHER OF SEA OR SWELL WHEN BOTH WERE REPORTED

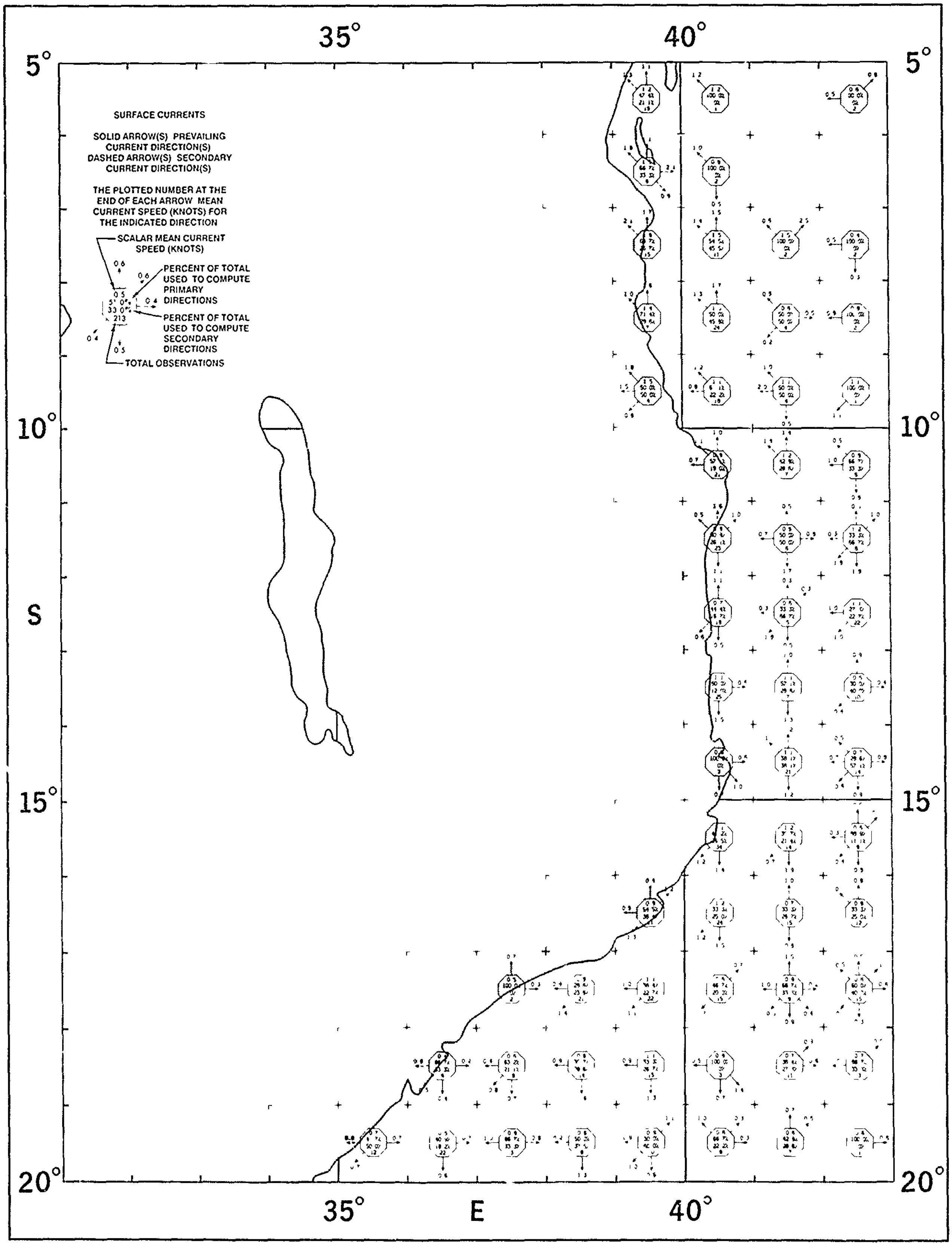
June Wave Height

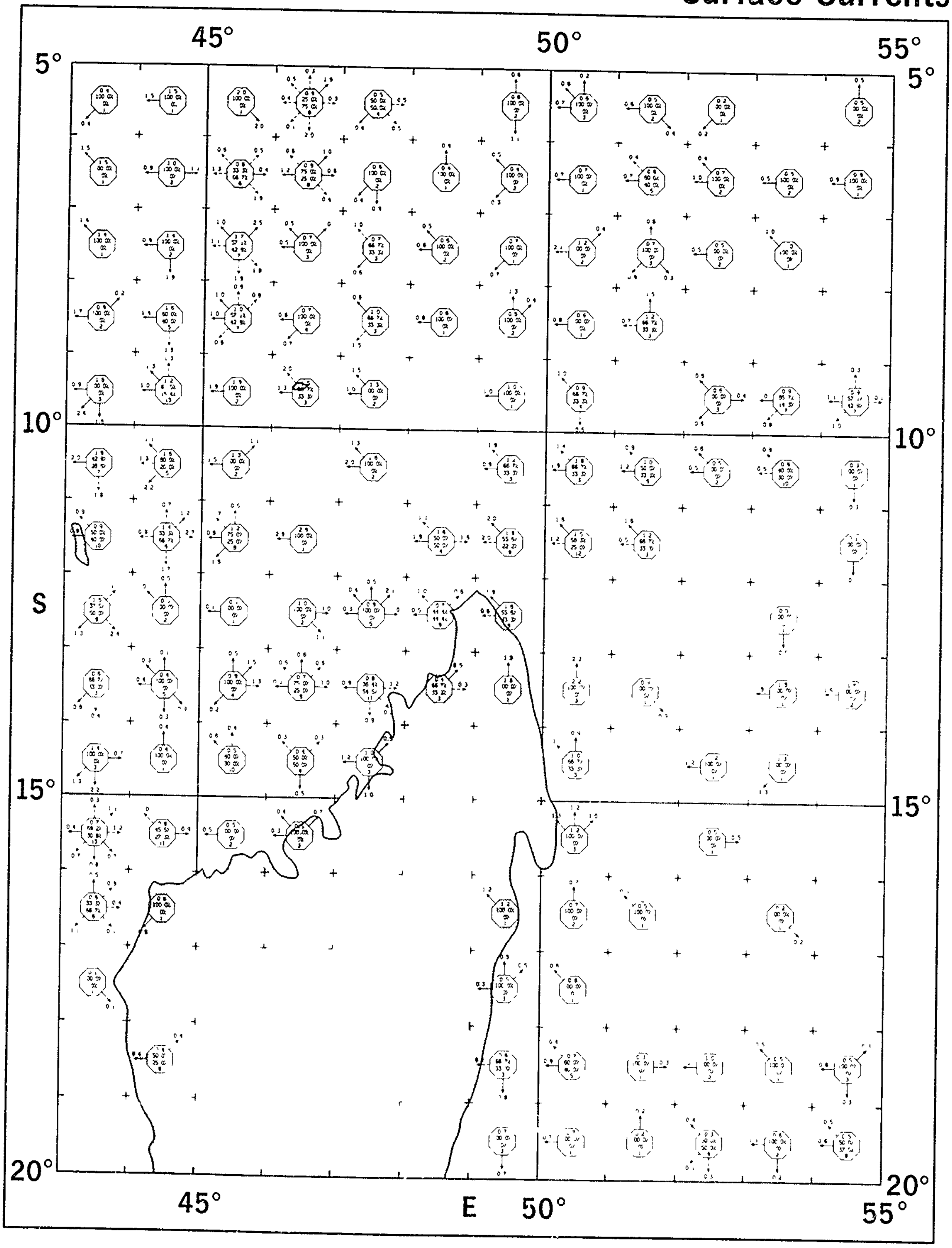


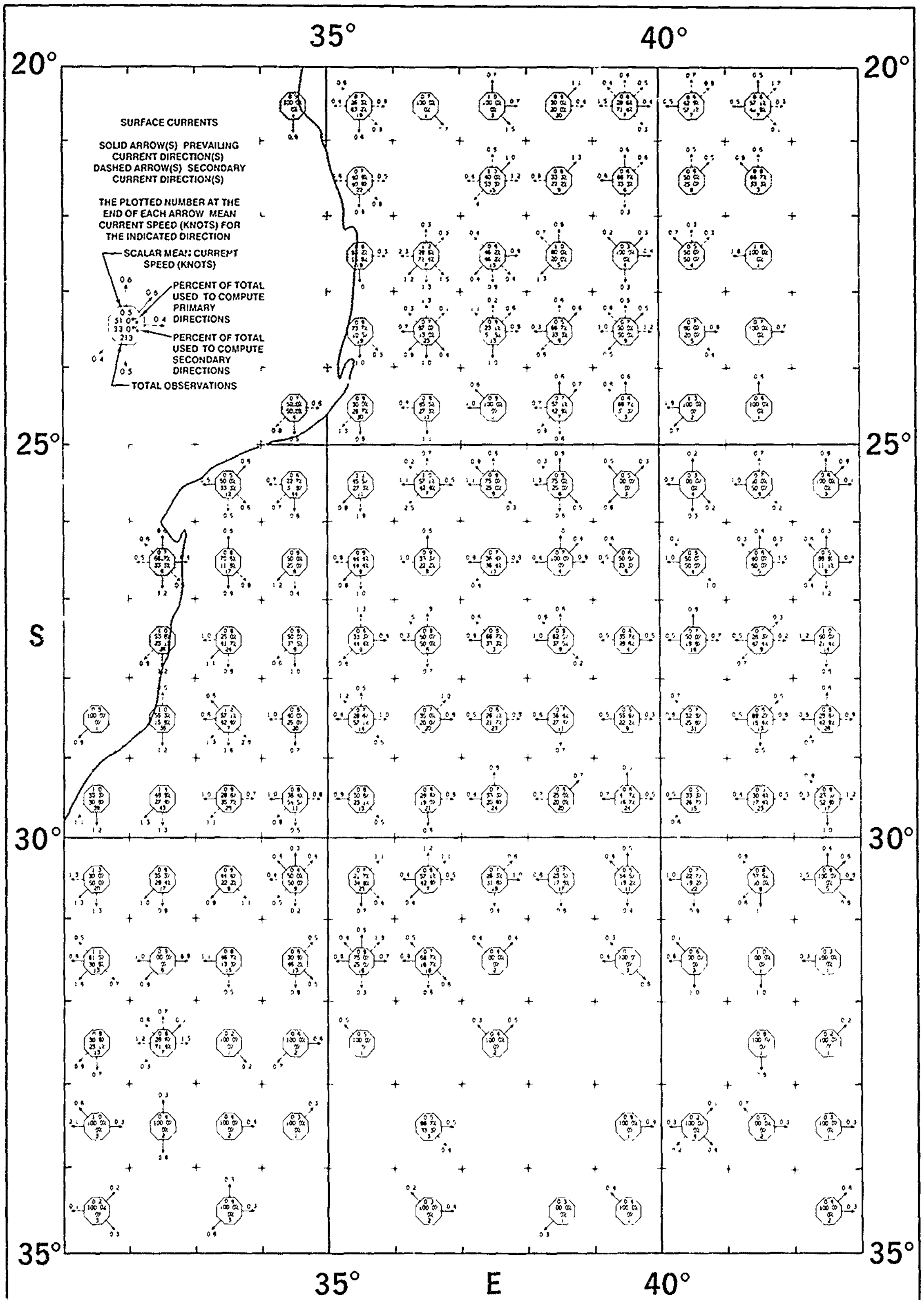

35°
40°
20°
25°
30°
35°
S
E
WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
Height Percent
≤2 100
3-4 200
5-6 300
7-9 200
10-12 100
≥13 100
N = 1363
EXAMPLE 30.0% OF ALL WAVE HEIGHTS WERE IN THE RANGE 5 - 6 FEET
N = OBSERVATION COUNT
WAVE DATA FOR THESE TABLES WERE SELECTED FROM THE HIGHER OF SEA OR SWELL WHEN BOTH WERE REPORTED

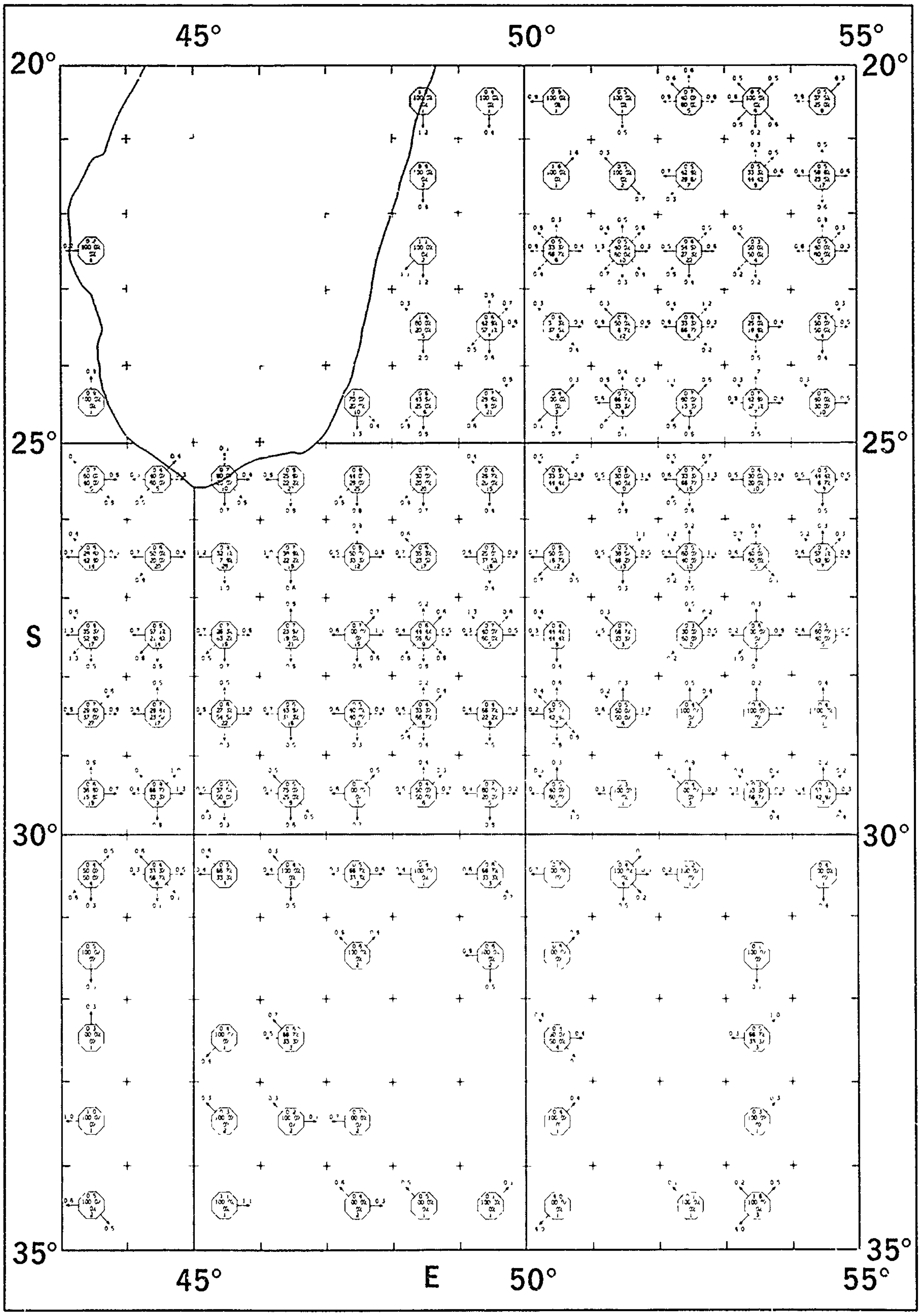
June Wave Height




35°
40°
5°
10°
S
15°
20°
E
SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS

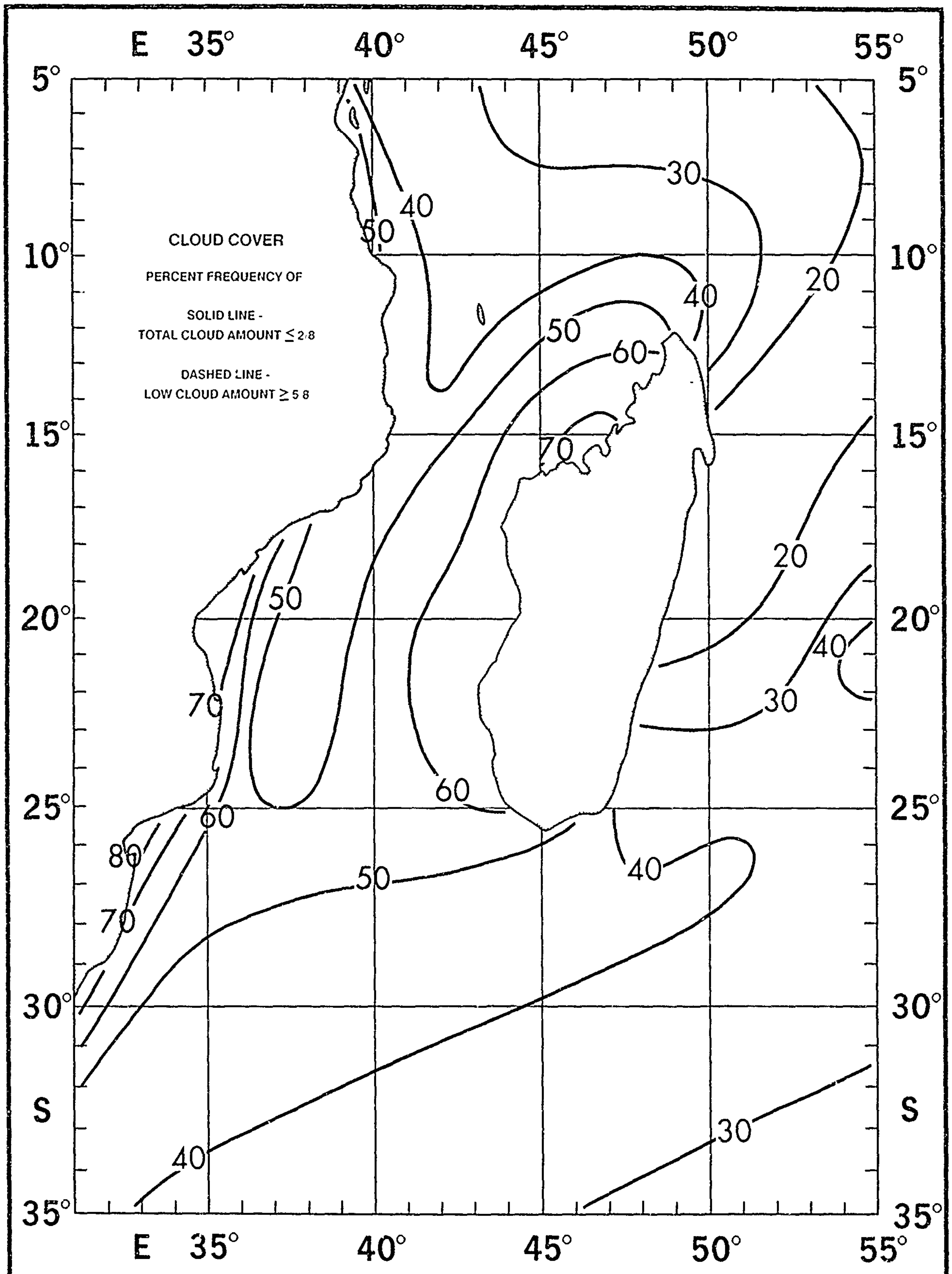

45°
50°
55°
5°
10°
S
15°
20°
E


35°
40°
20°
25°
30°
35°
S
E
SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS


45°
50°
55°
20°
25°
S
30°
35°
E

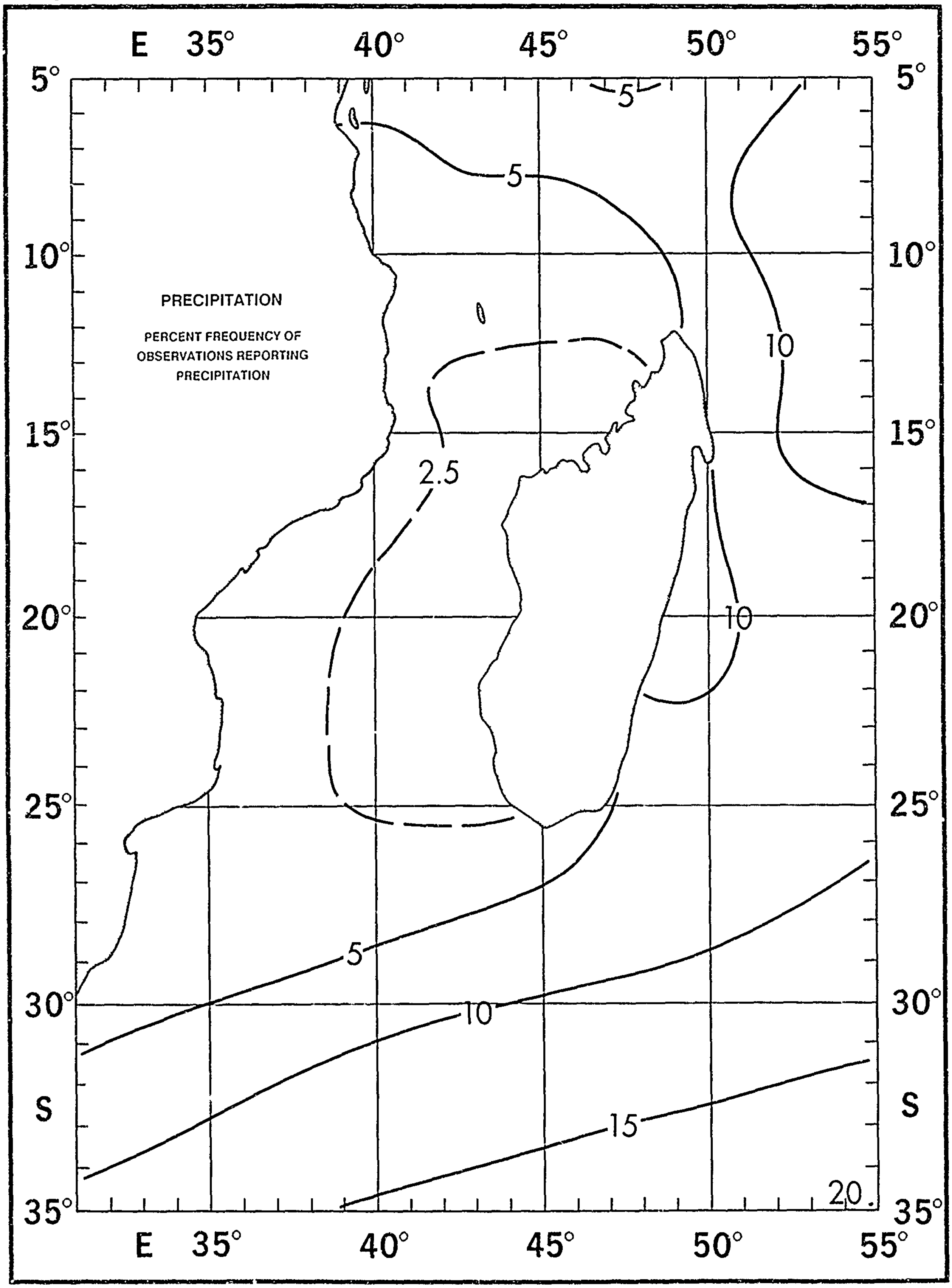
July

Clouds



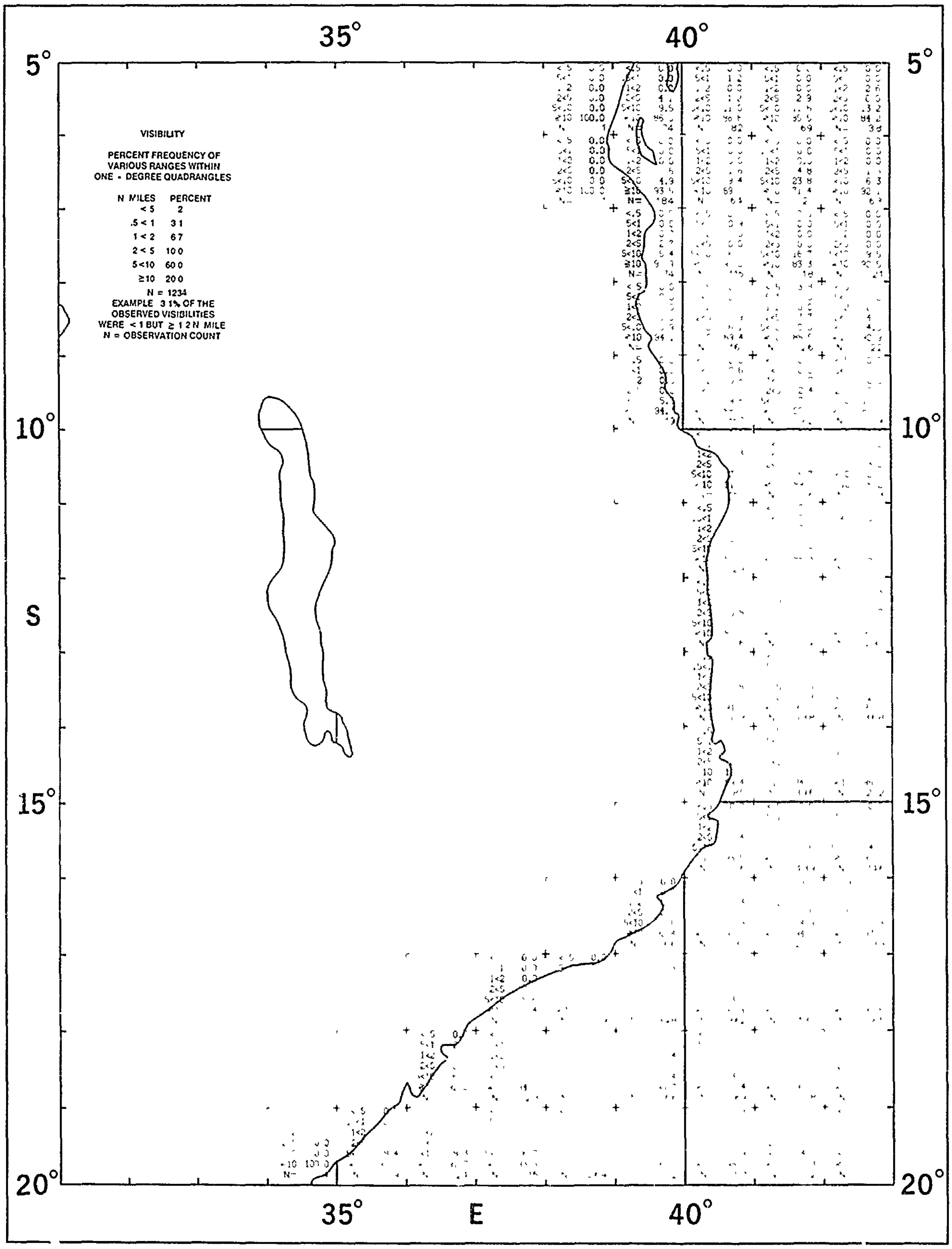
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
CLOUD COVER
PERCENT FREQUENCY OF
SOLID LINE - TOTAL CLOUD AMOUNT ≤ 2/8
DASHED LINE - LOW CLOUD AMOUNT ≥ 5/8
30
40
50
20
40
50
60
70
50
20
40
70
30
60
60
80
50
40
70
40
30

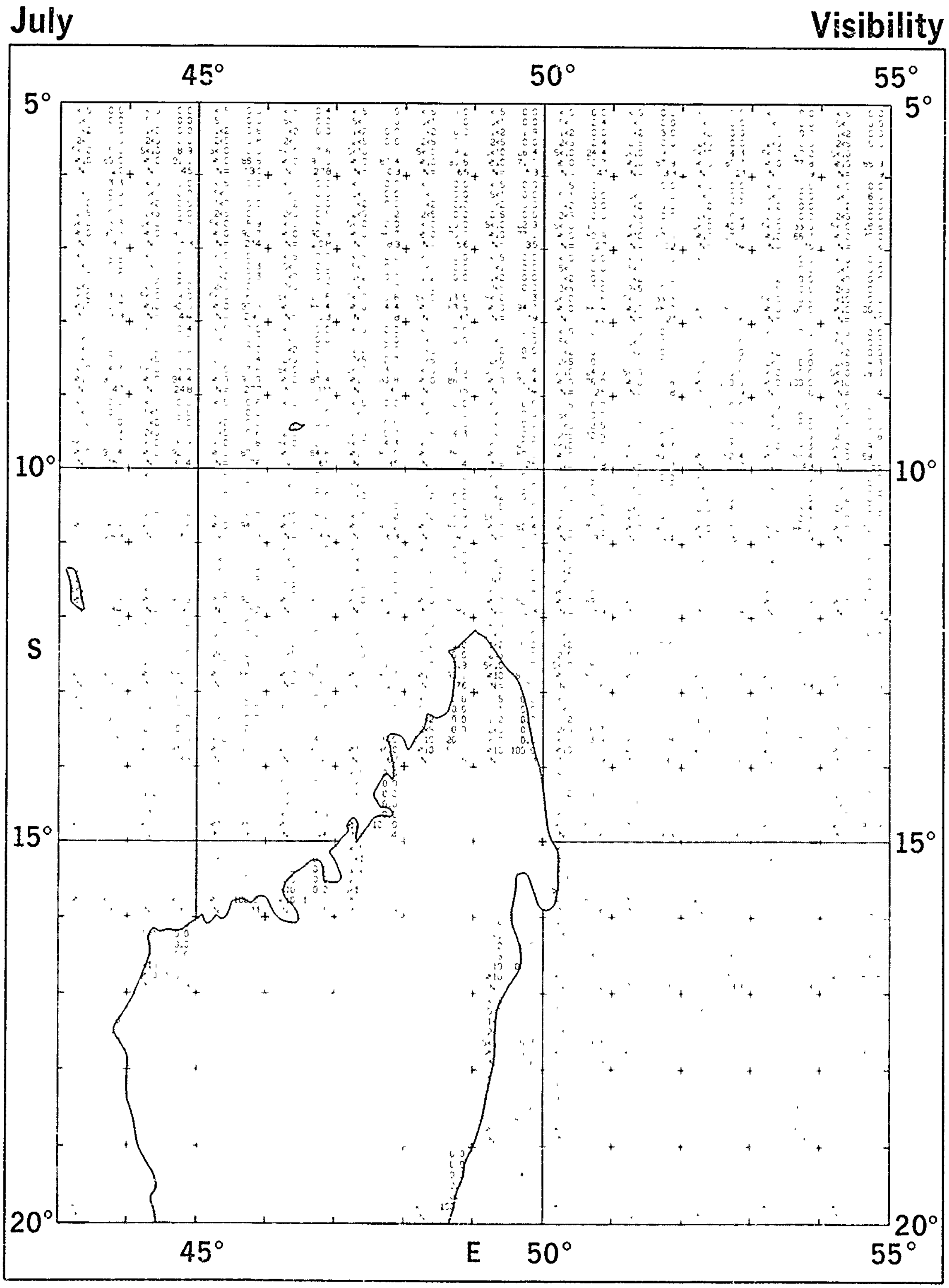
July Precipitation

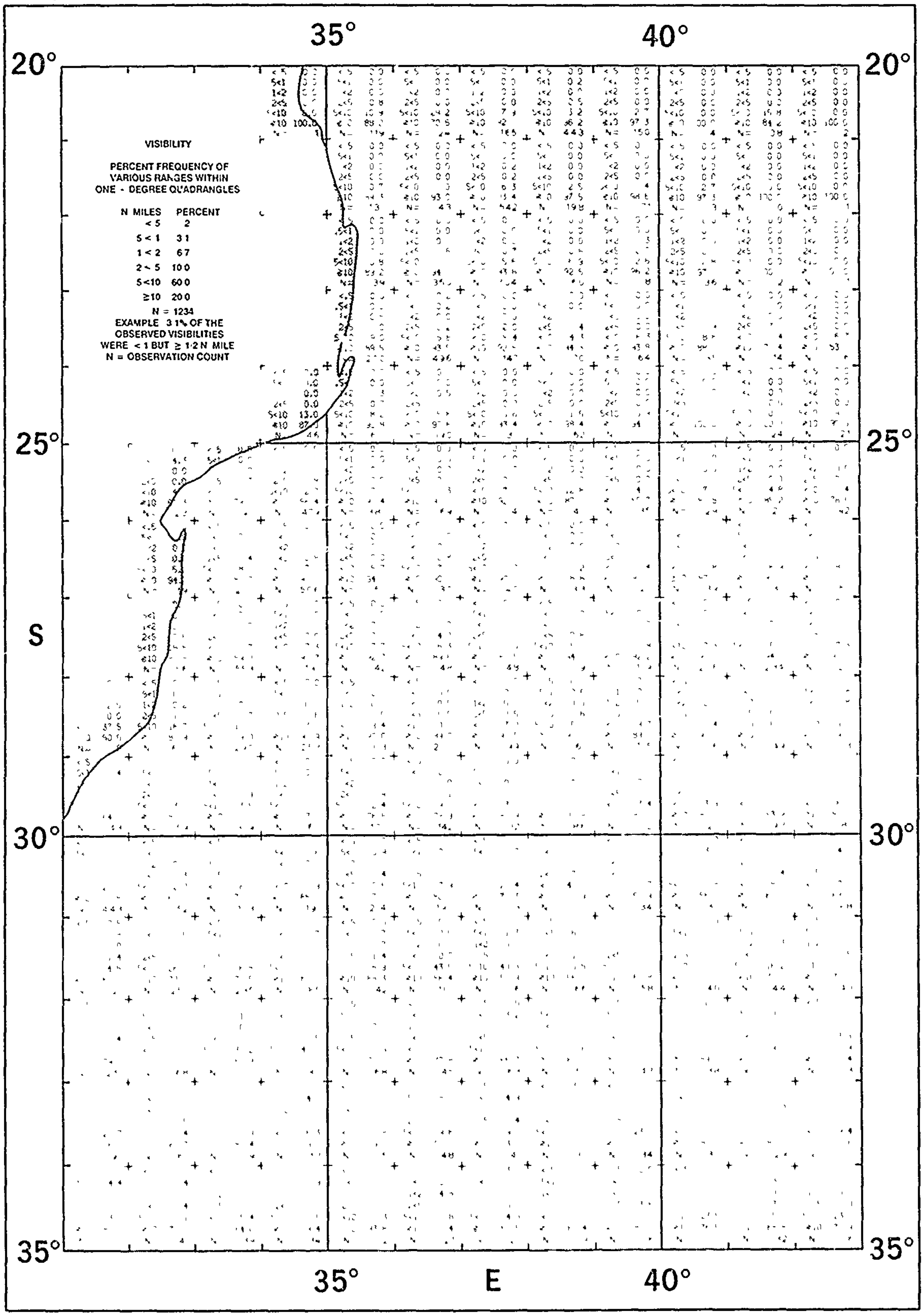


July

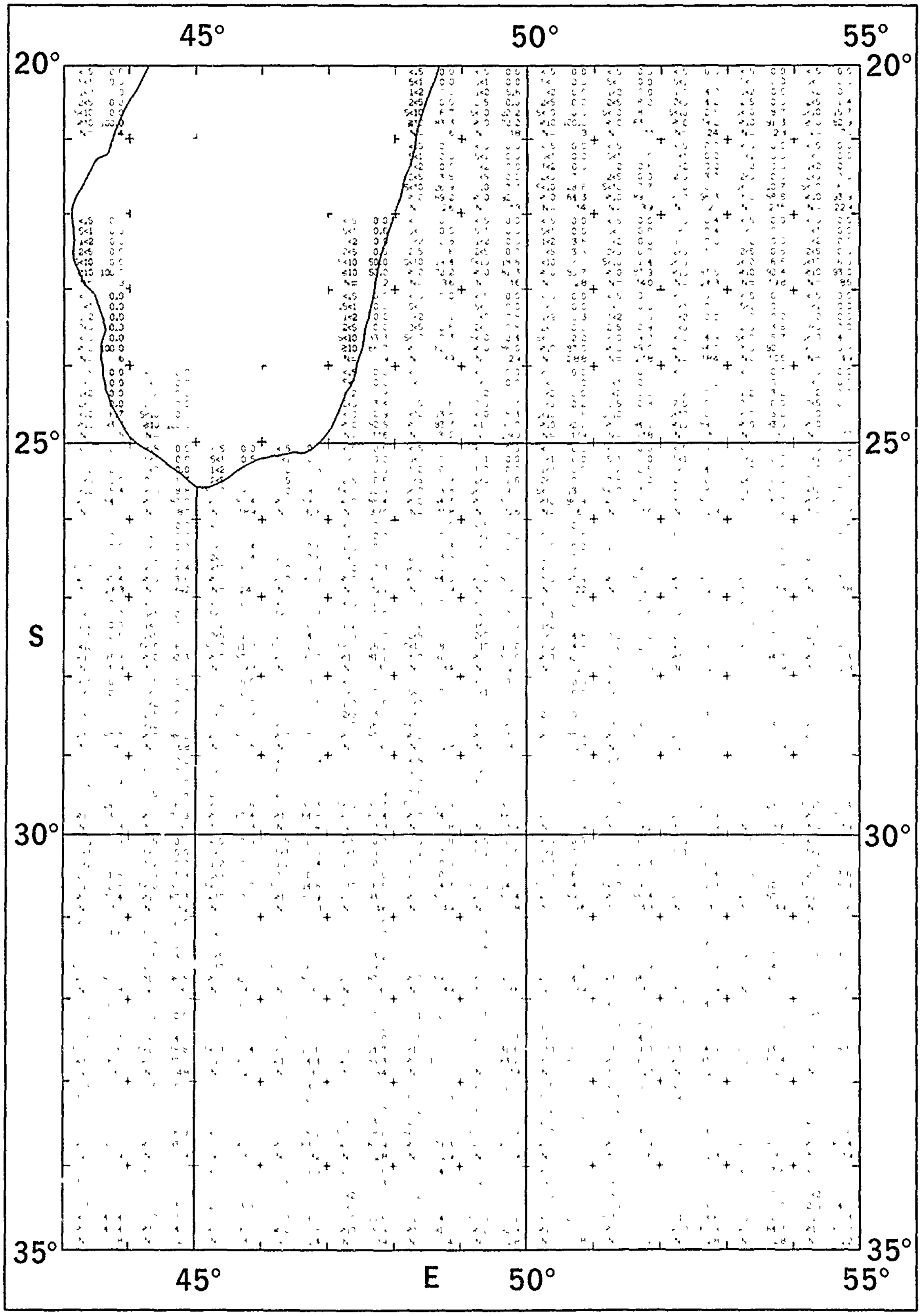
Visibility

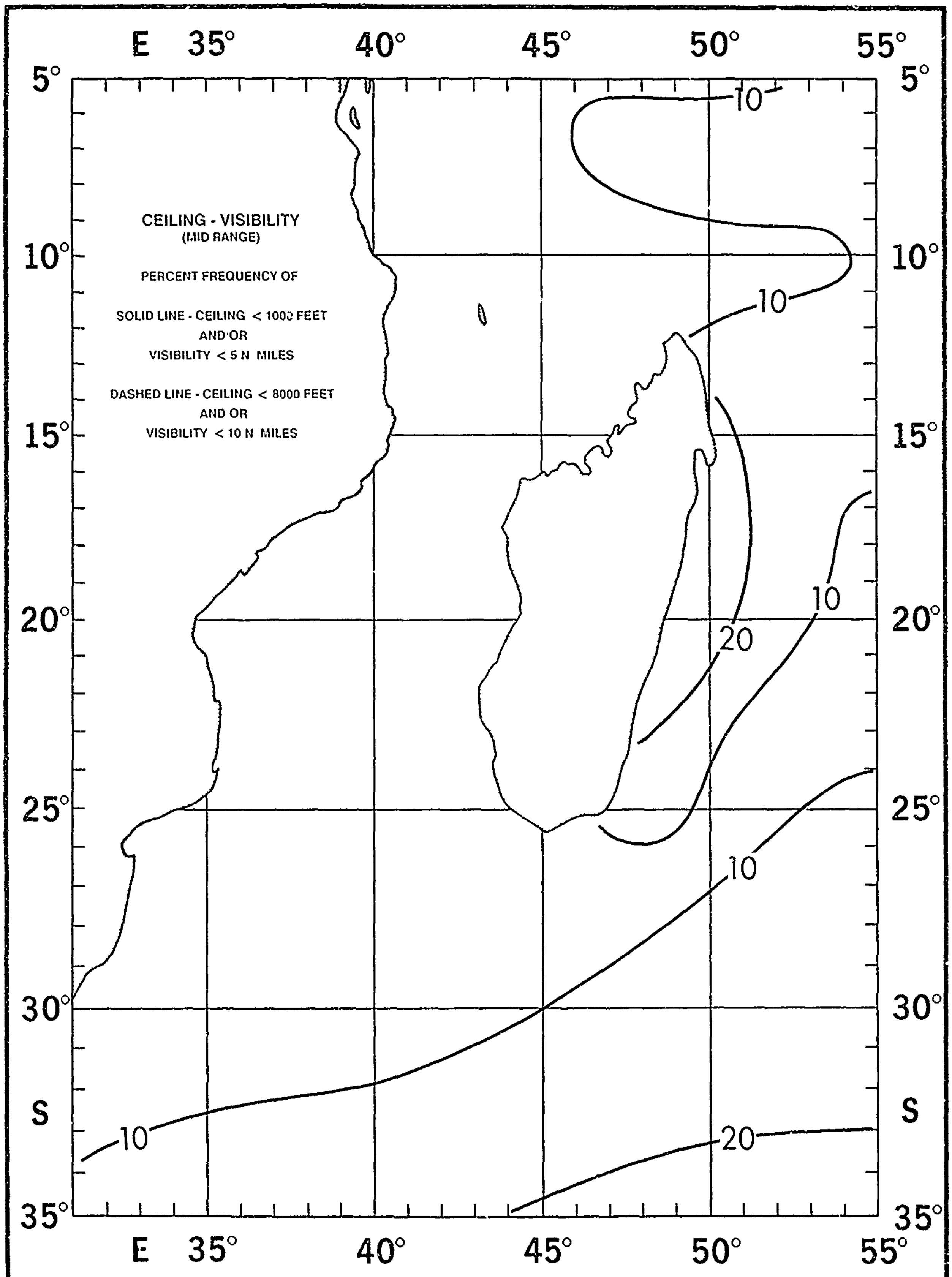


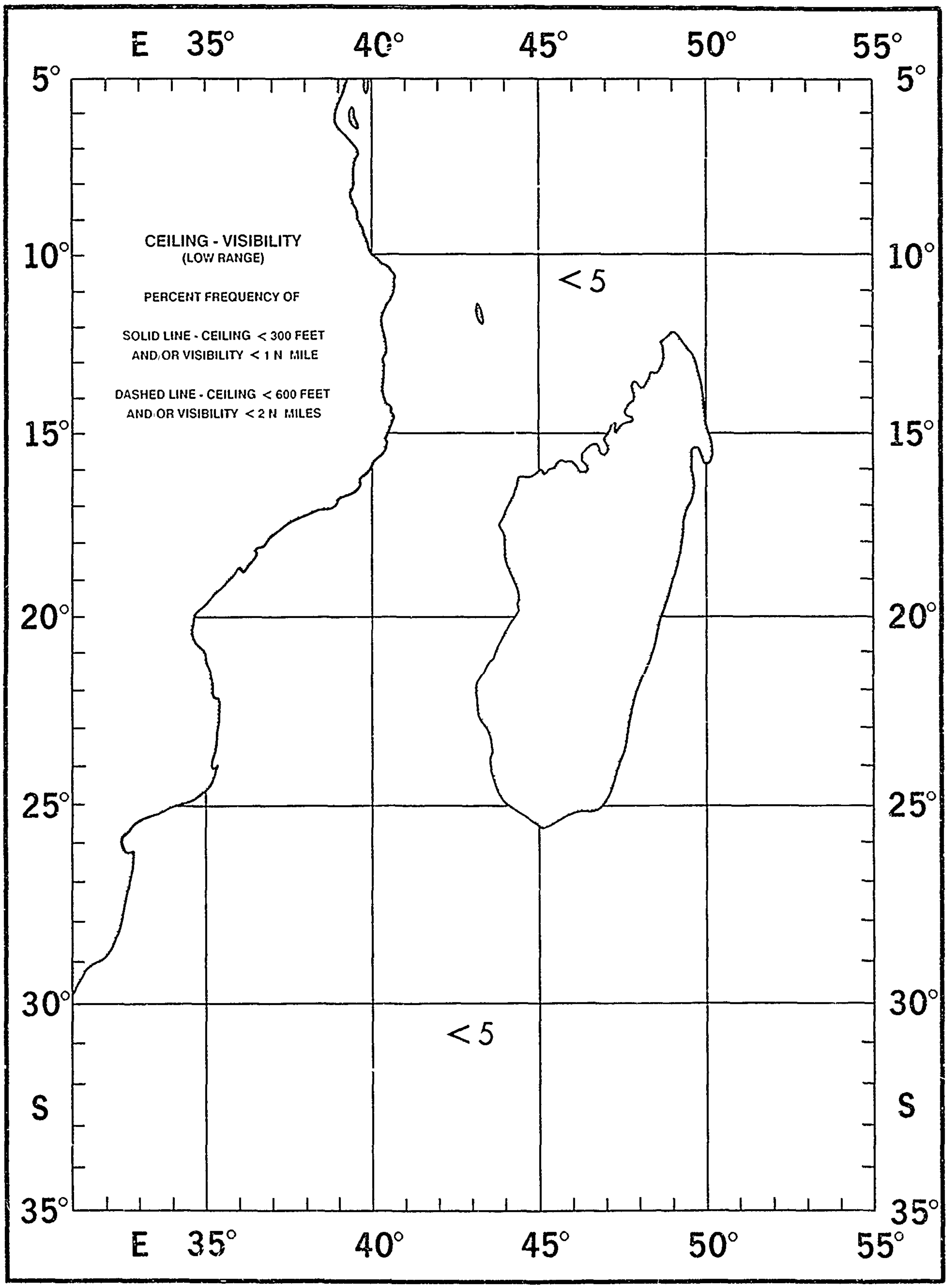

July
Visibility
45°
50°
55°
5°
10°
15°
20°
S
E

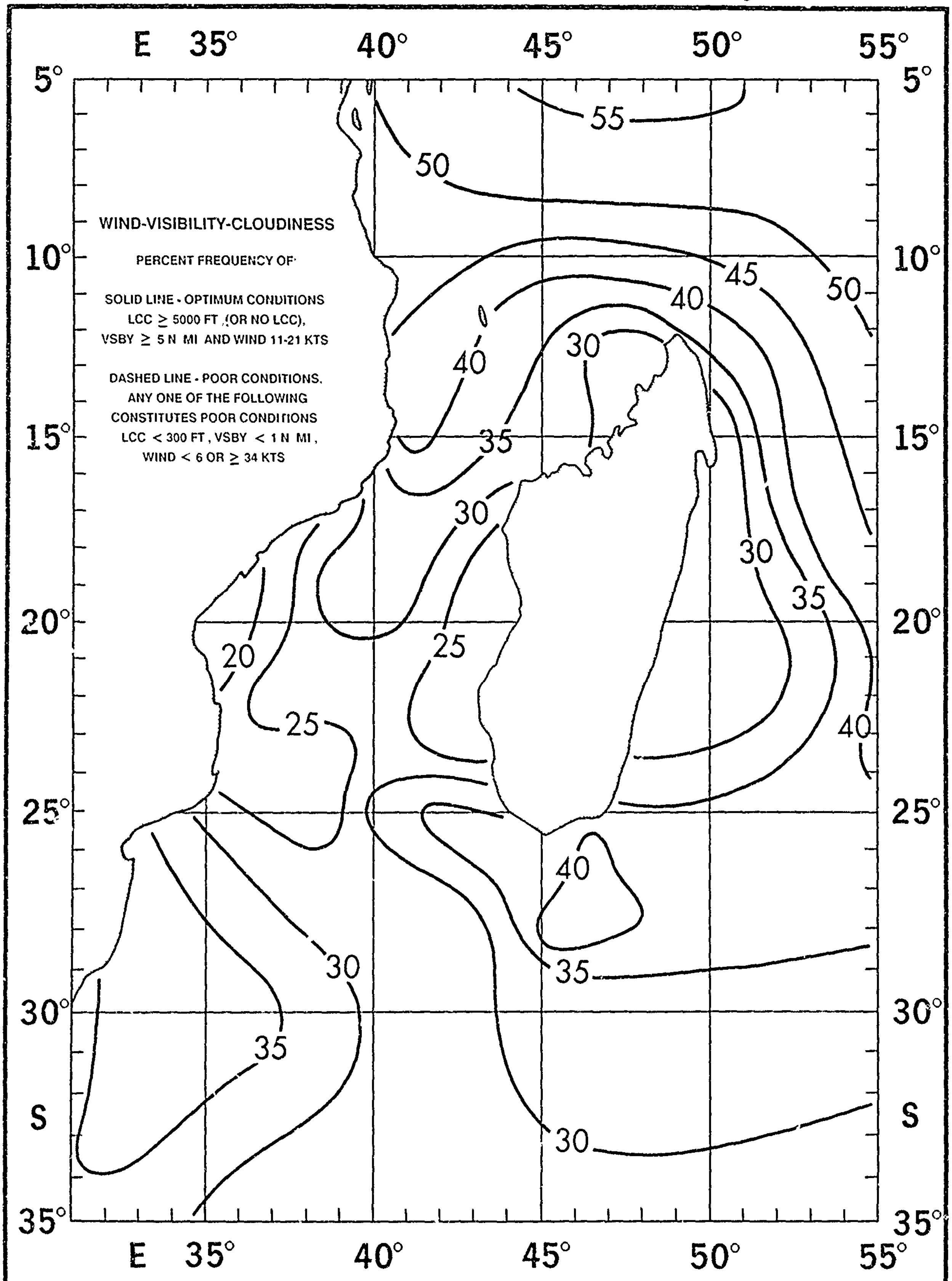

35°
40°
20°
20°
VISIBILITY
PERCENT FREQUENCY OF
VARIOUS RANGES WITHIN
ONE - DEGREE QUADRANGLES
N MILES PERCENT
< 5 2
5 < 1 3 1
1 < 2 6 7
2 < 5 10 0
5 < 10 60 0
≥ 10 20 0
N = 1234
EXAMPLE 3 1% OF THE
OBSERVED VISIBILITIES
WERE < 1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT
25°
25°
S
30°
30°
35°
35°
35°
E
40°

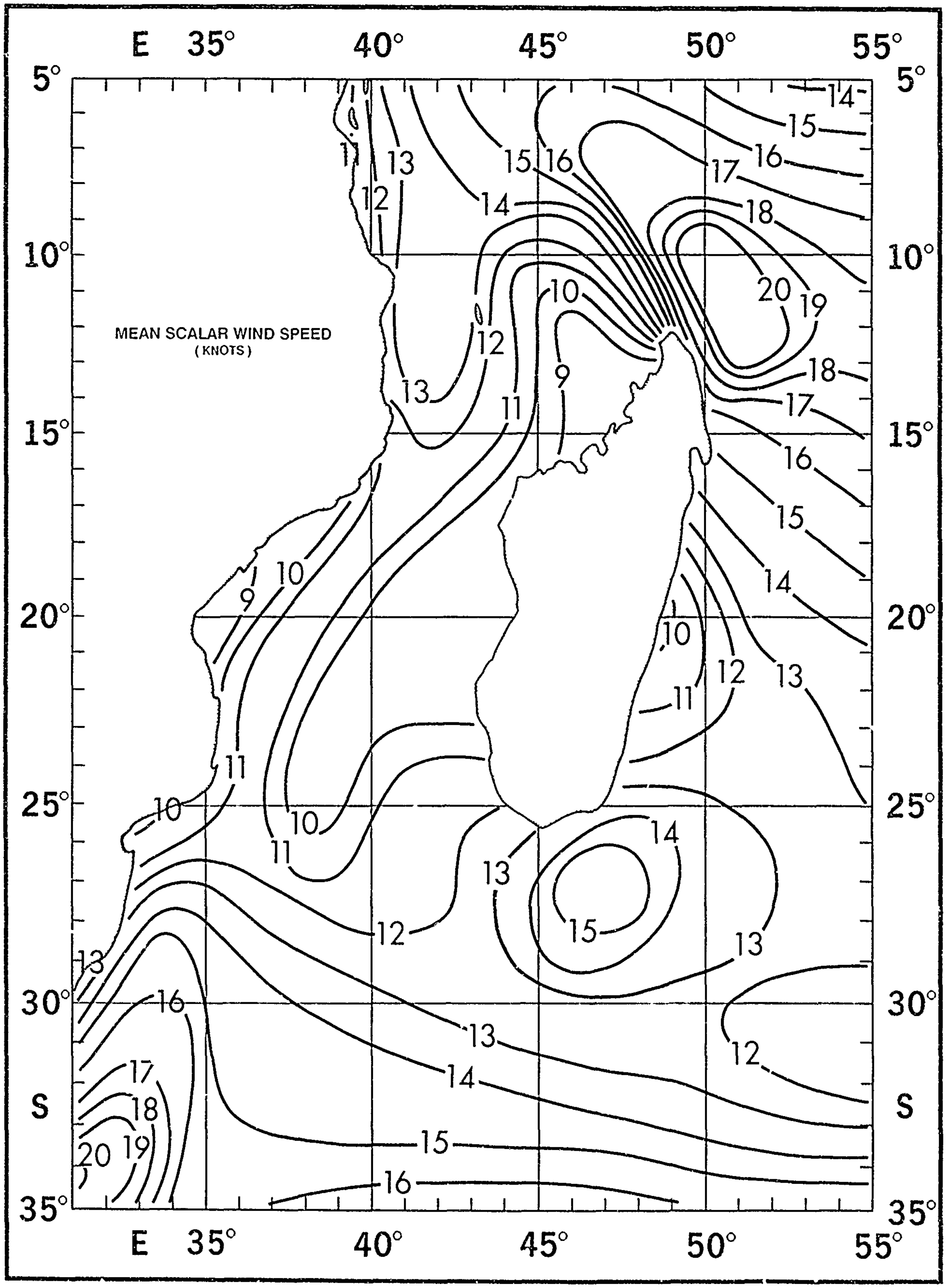
July Visibility



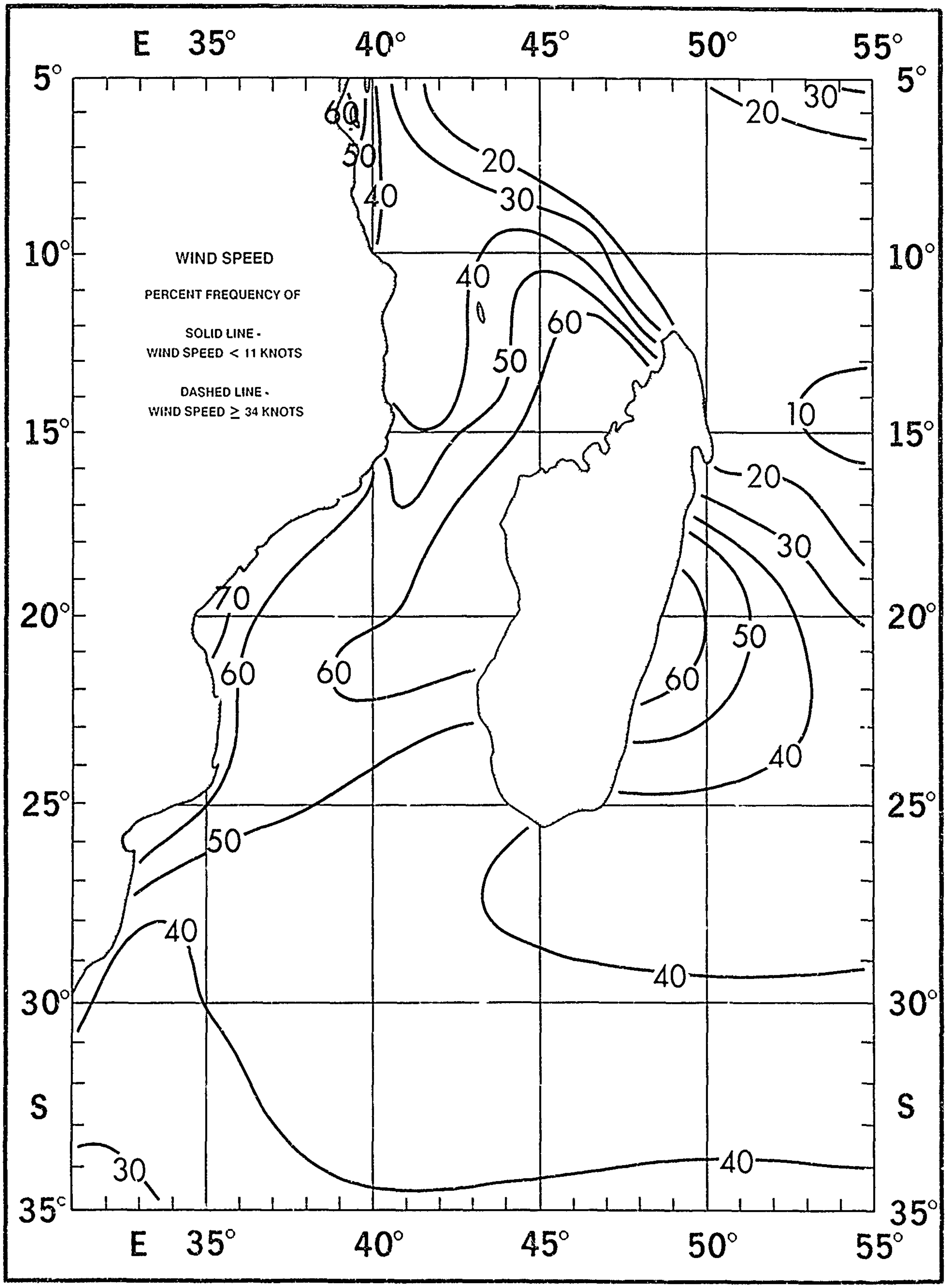

E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
CEILING - VISIBILITY
(MID RANGE)
PERCENT FREQUENCY OF
SOLID LINE - CEILING < 1000 FEET
AND/OR
VISIBILITY < 5 N MILES
DASHED LINE - CEILING < 8000 FEET
AND/OR
VISIBILITY < 10 N MILES
10
20


E 35°
40°
45°
50°
55°
5°
10°
15°
20°
25°
30°
35°
S
CEILING - VISIBILITY
(LOW RANGE)
PERCENT FREQUENCY OF
SOLID LINE - CEILING < 300 FEET
AND/OR VISIBILITY < 1 N MILE
DASHED LINE - CEILING < 600 FEET
AND/OR VISIBILITY < 2 N MILES
< 5
< 5


WIND-VISIBILITY-CLOUDINESS
PERCENT FREQUENCY OF
SOLID LINE - OPTIMUM CONDITIONS
LCC ≥ 5000 FT (OR NO LCC),
VSBY ≥ 5 N MI AND WIND 11-21 KTS
DASHED LINE - POOR CONDITIONS.
ANY ONE OF THE FOLLOWING
CONSTITUTES POOR CONDITIONS
LCC < 300 FT, VSBY < 1 N MI,
WIND < 6 OR ≥ 34 KTS
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
55
50
45
40
30
35
25
20

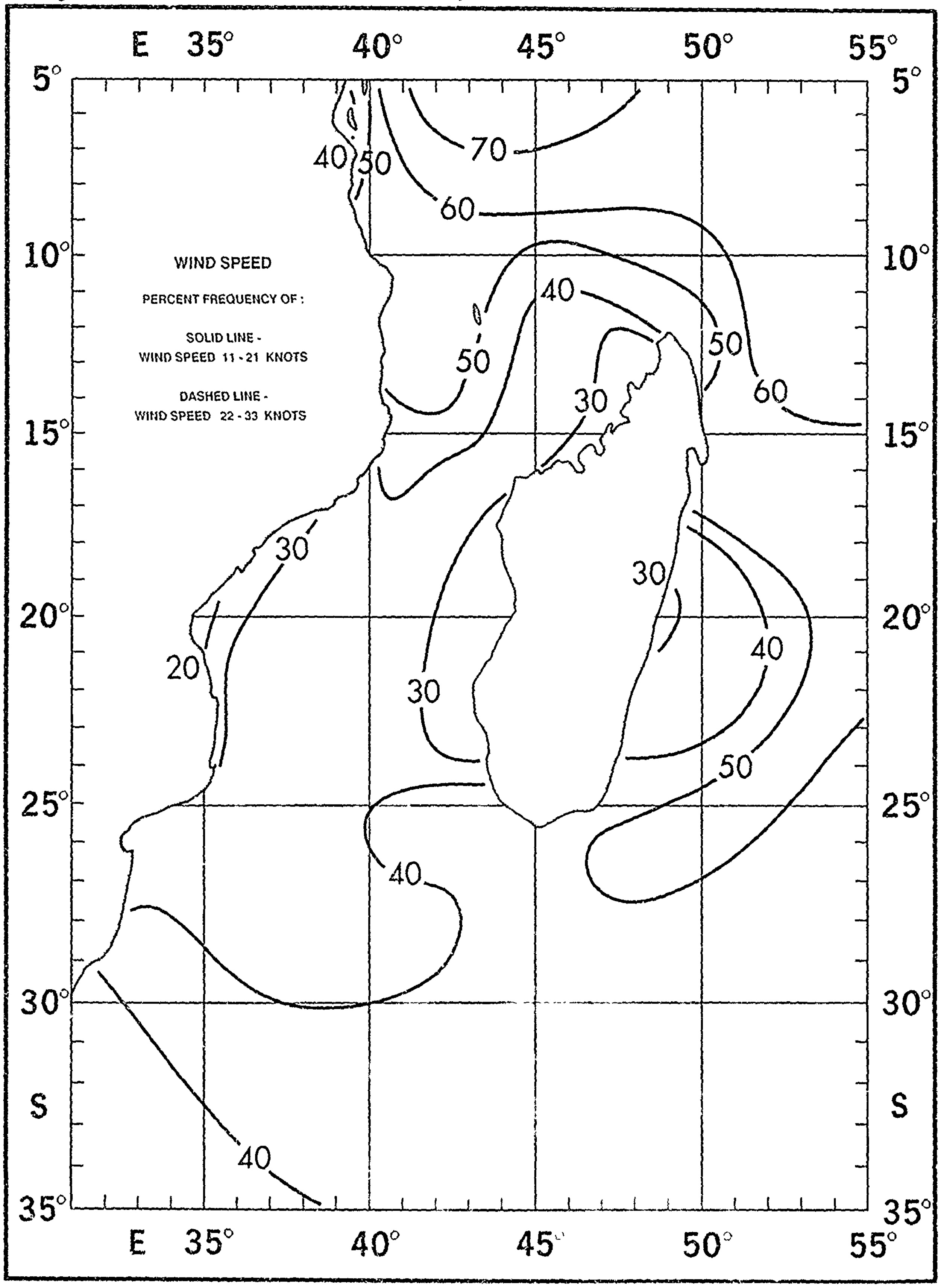

E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
MEAN SCALAR WIND SPEED
(KNOTS)

July — Wind Speed <11 and ≥34 Knots



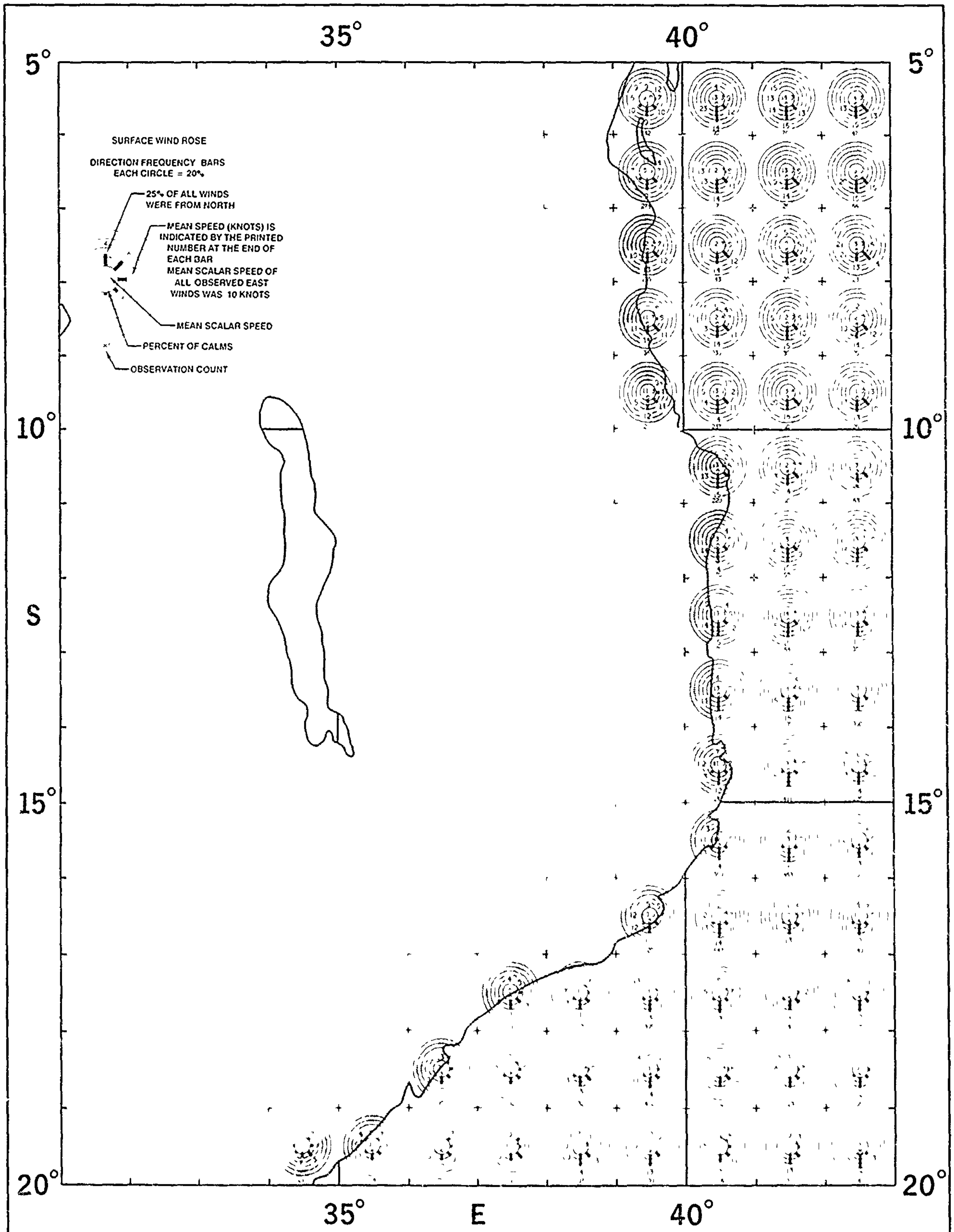
July

Wind Speed 11 - 21 and 22 - 33 Knots



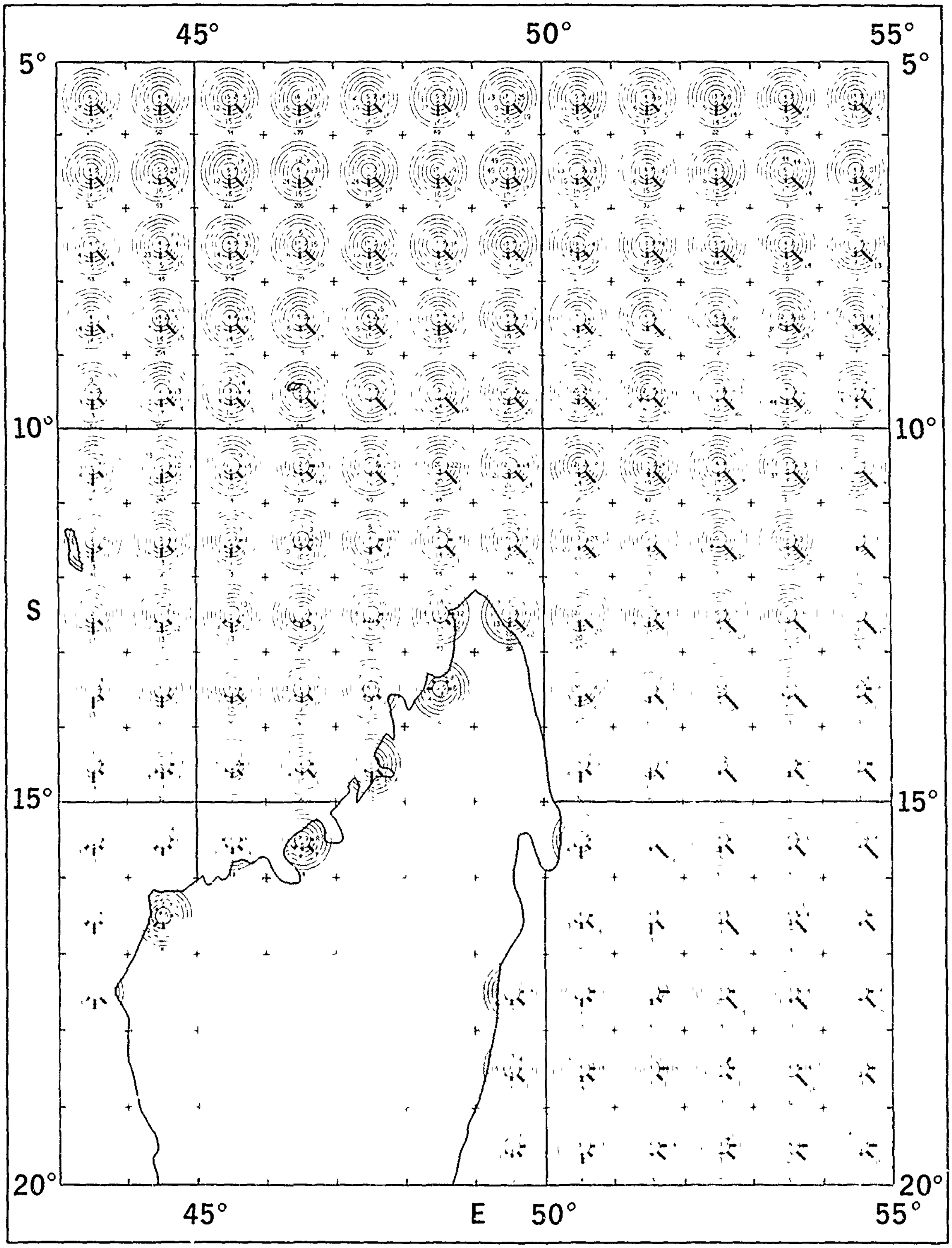
July

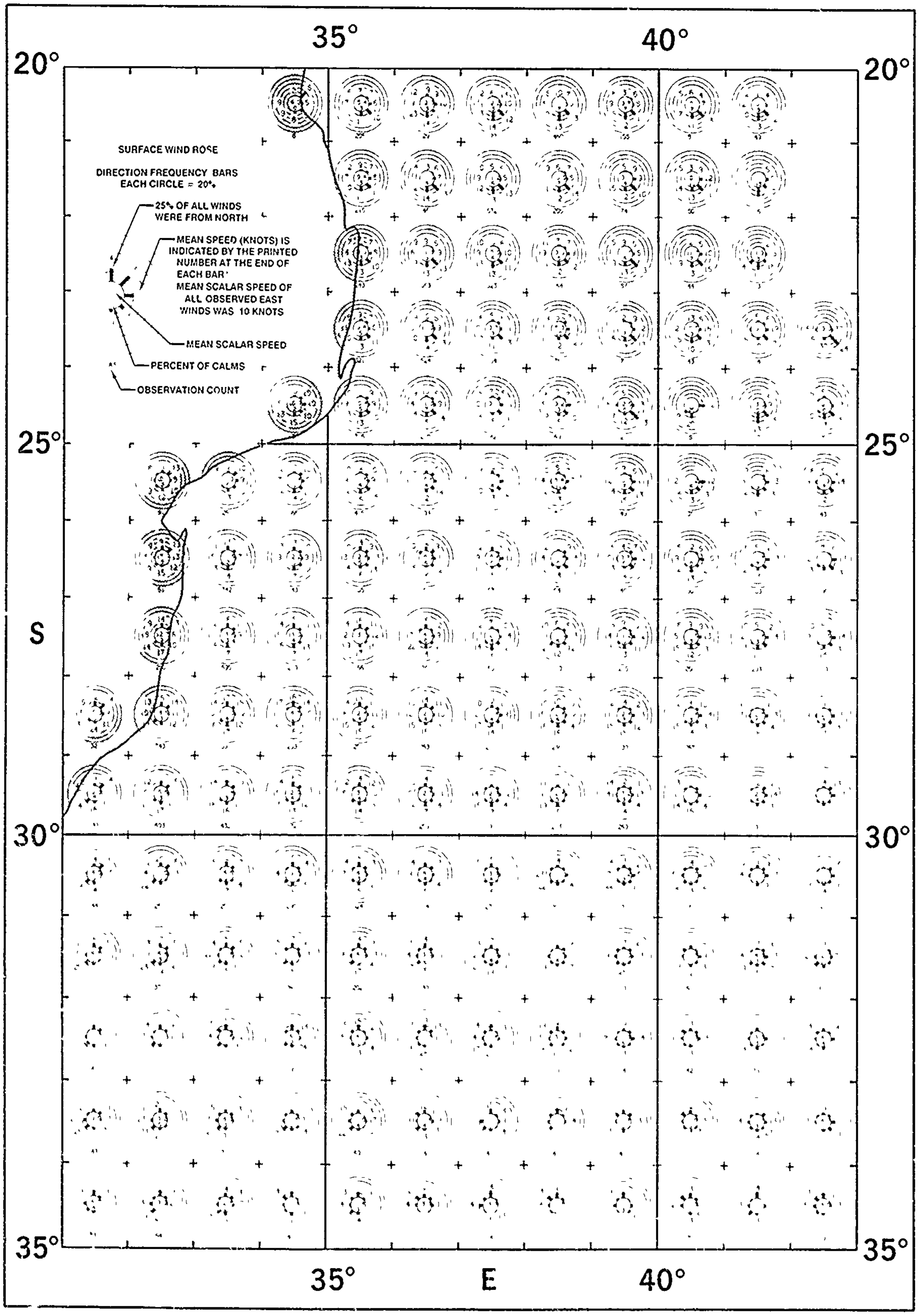
Surface Wind Roses

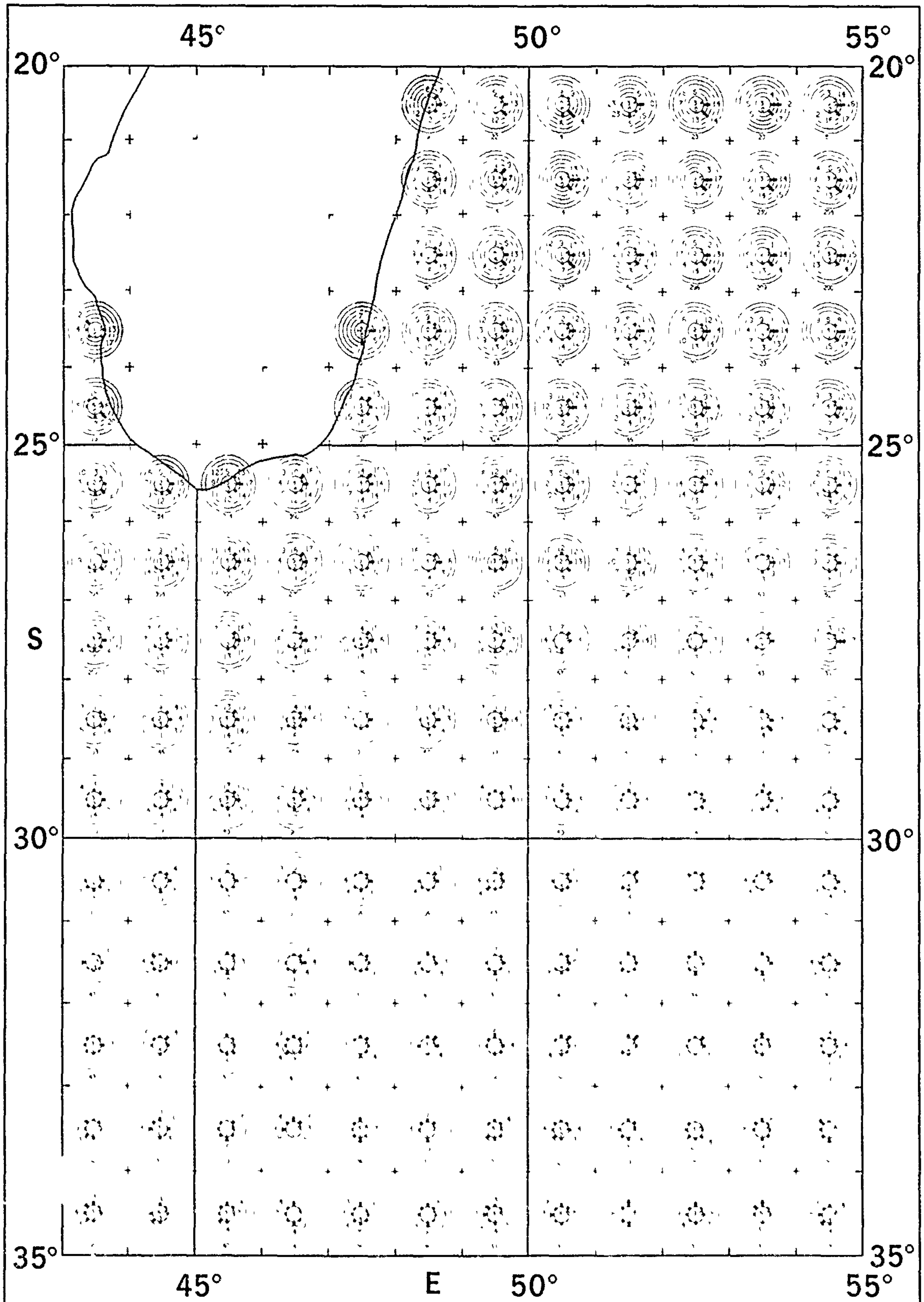


July

Surface Wind Roses

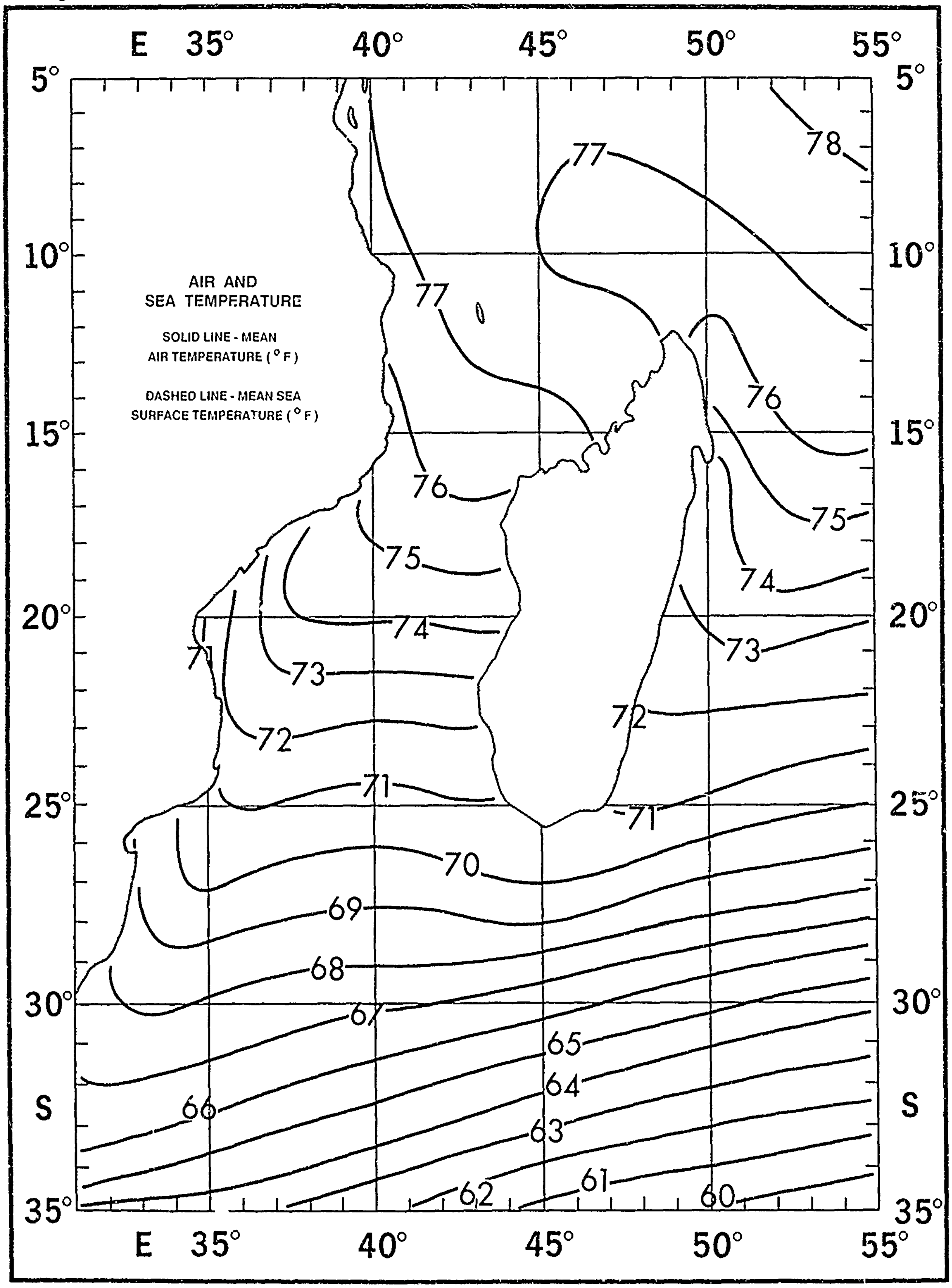



35°
40°
20°
20°
SURFACE WIND ROSE
DIRECTION FREQUENCY BARS
EACH CIRCLE = 20%
25% OF ALL WINDS
WERE FROM NORTH
MEAN SPEED (KNOTS) IS
INDICATED BY THE PRINTED
NUMBER AT THE END OF
EACH BAR
MEAN SCALAR SPEED OF
ALL OBSERVED EAST
WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT
25°
25°
S
30°
30°
35°
35°
35°
E
40°


45°
50°
55°
20°
25°
30°
35°
S
E

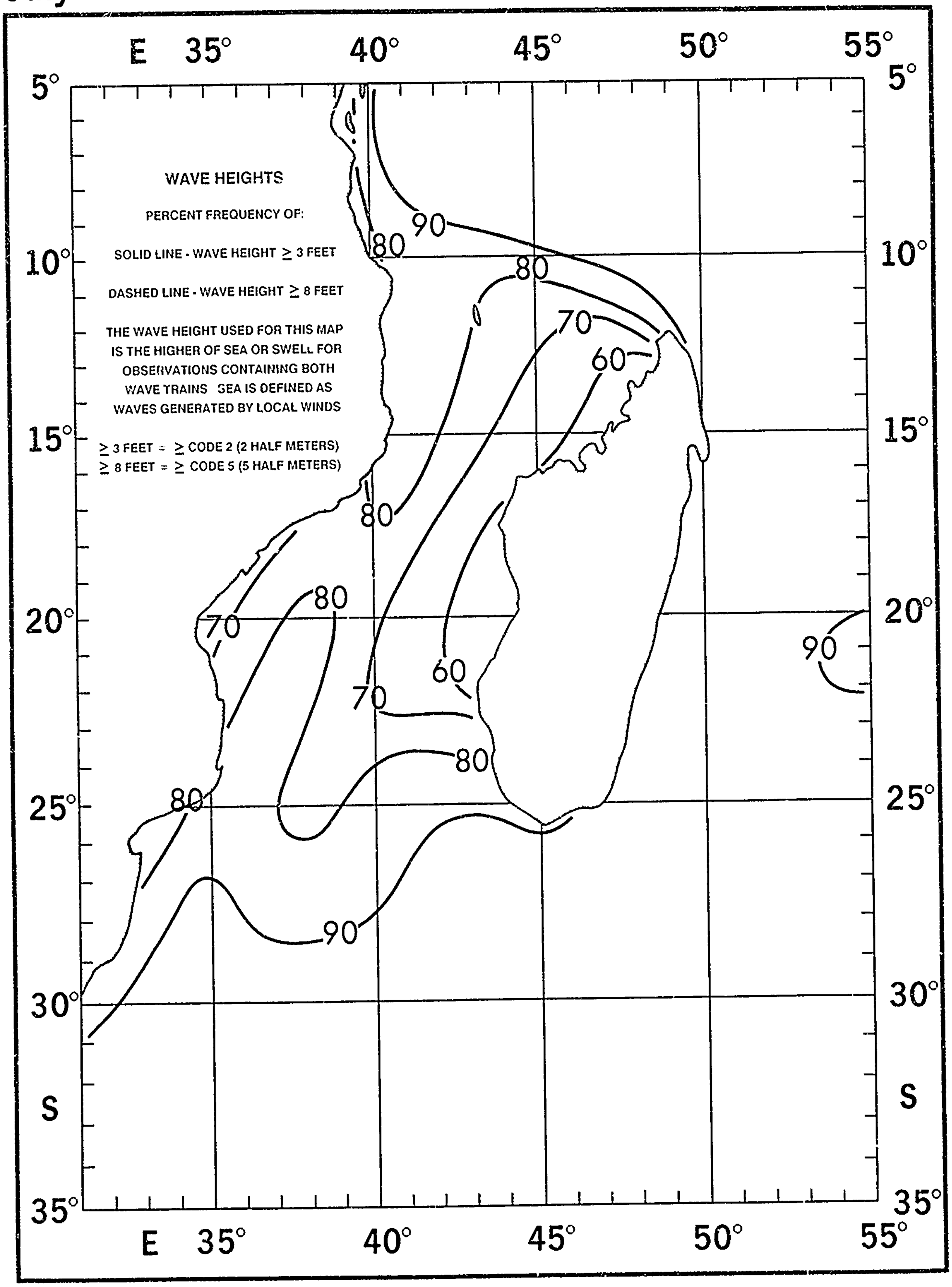
July

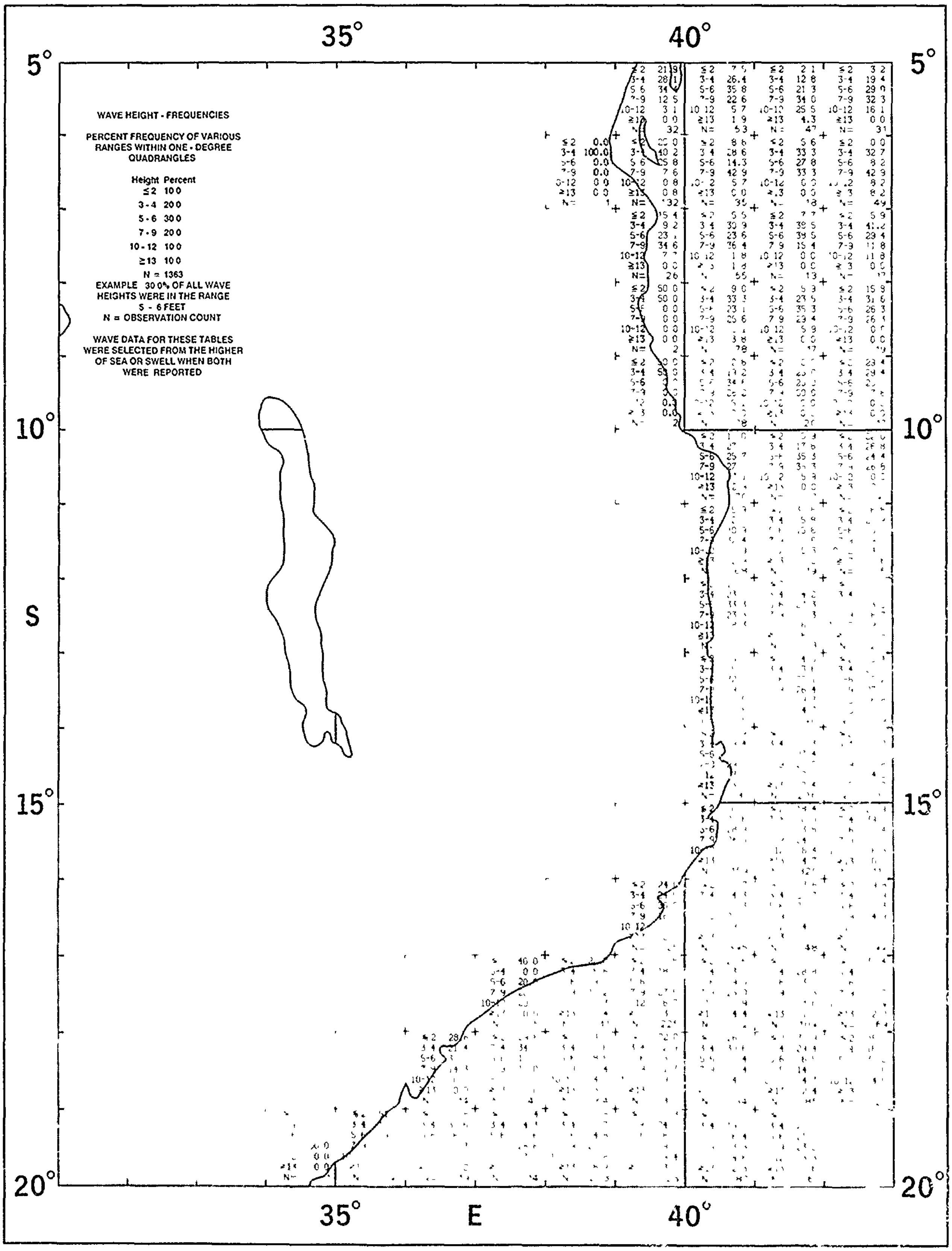
Air and Sea Temperature



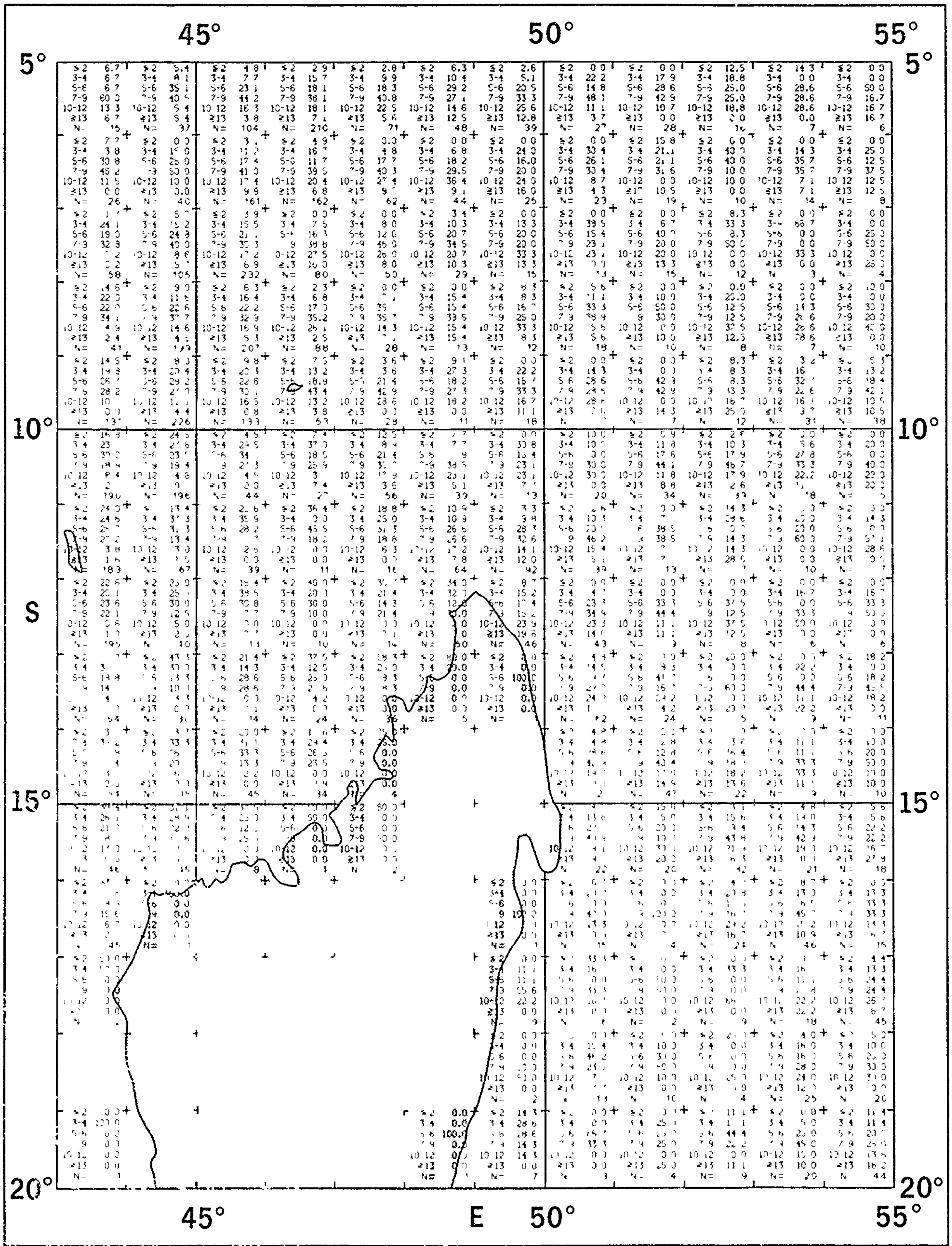
July

Wave Height

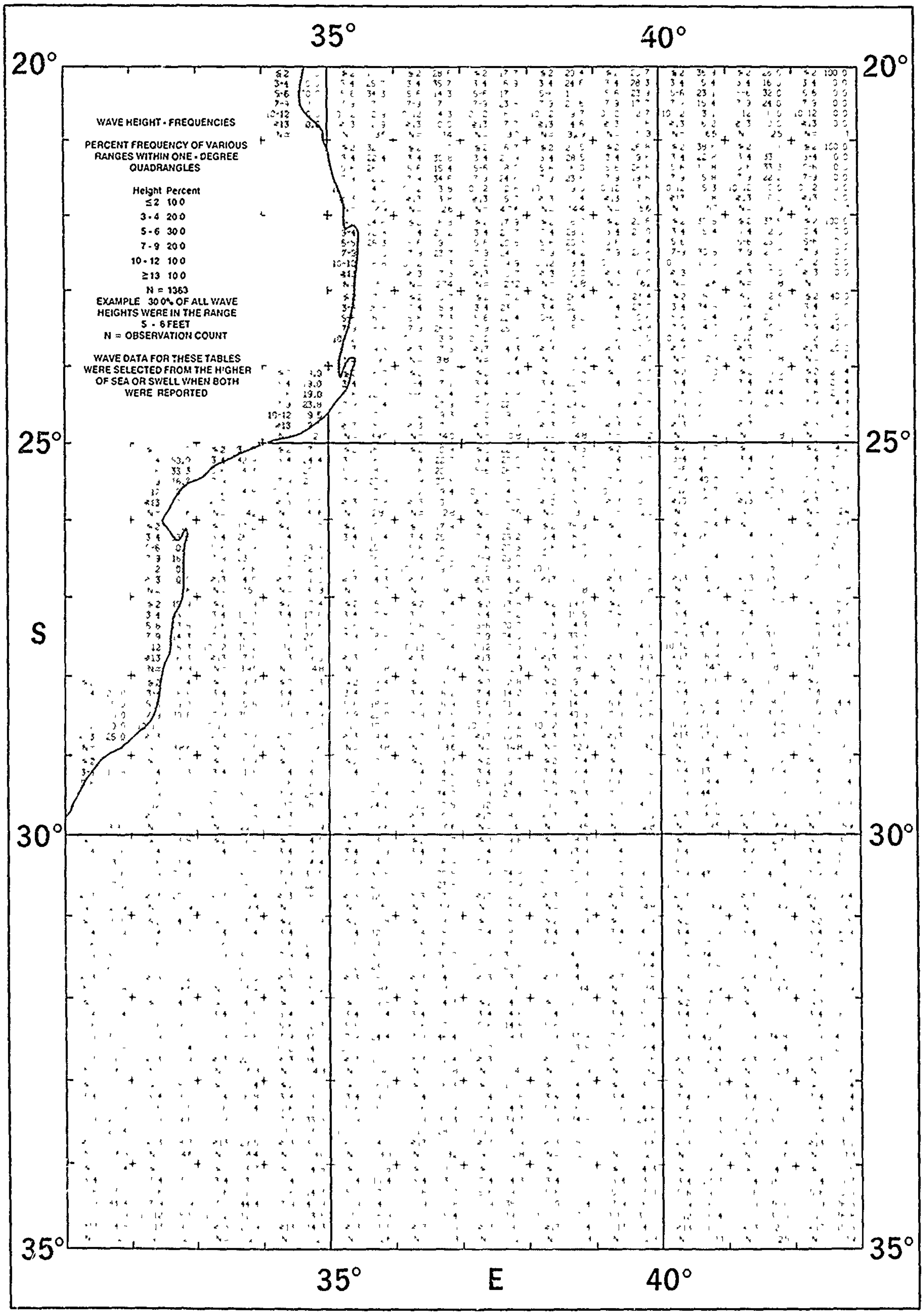



35°
40°
5°
10°
15°
20°
S
E
WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
Height Percent
≤2 10.0
3-4 20.0
5-6 30.0
7-9 20.0
10-12 10.0
≥13 10.0
N = 1363
EXAMPLE 30.0% OF ALL WAVE HEIGHTS WERE IN THE RANGE 5 - 6 FEET
N = OBSERVATION COUNT
WAVE DATA FOR THESE TABLES WERE SELECTED FROM THE HIGHER OF SEA OR SWELL WHEN BOTH WERE REPORTED

July **Wave Height**

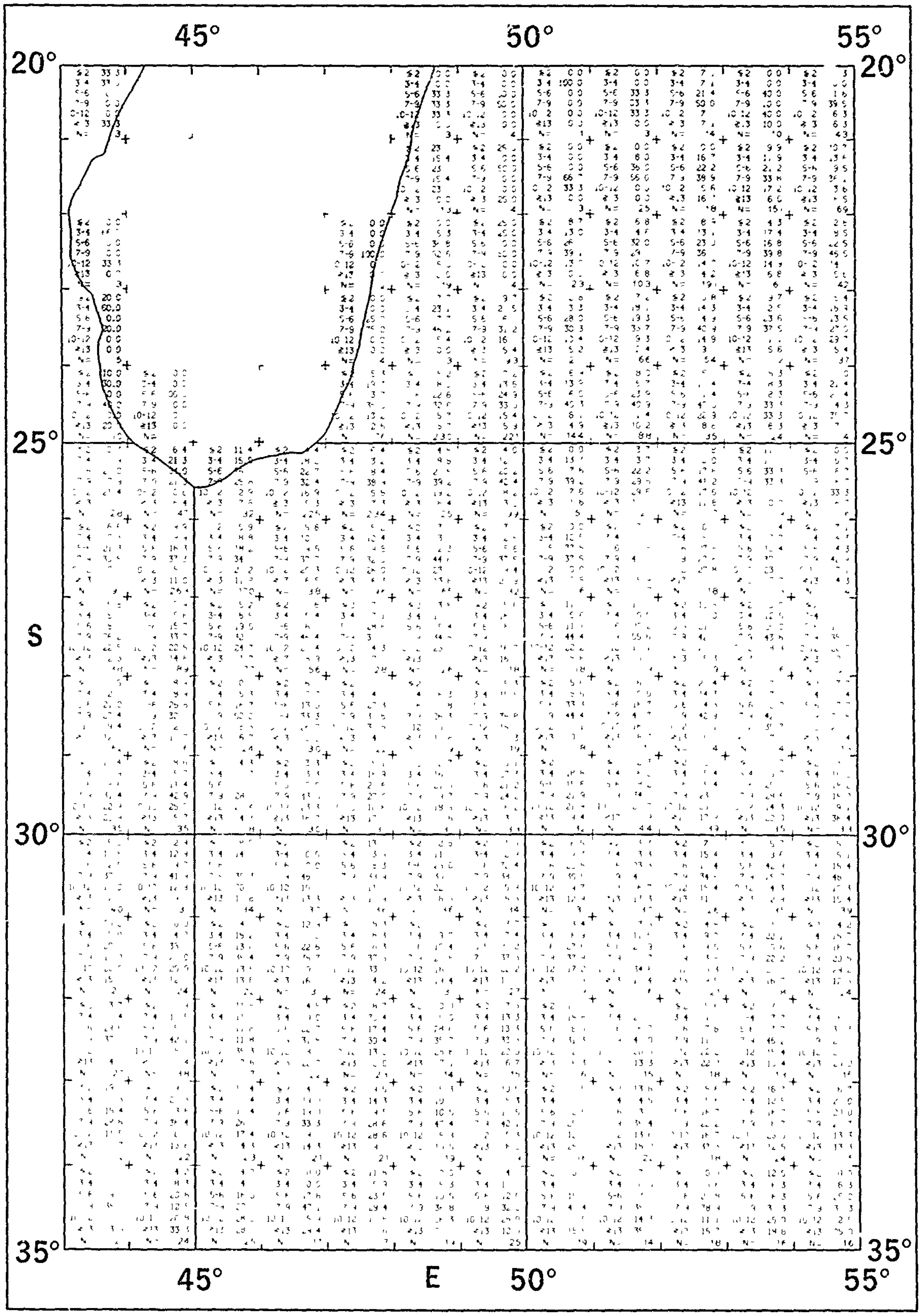


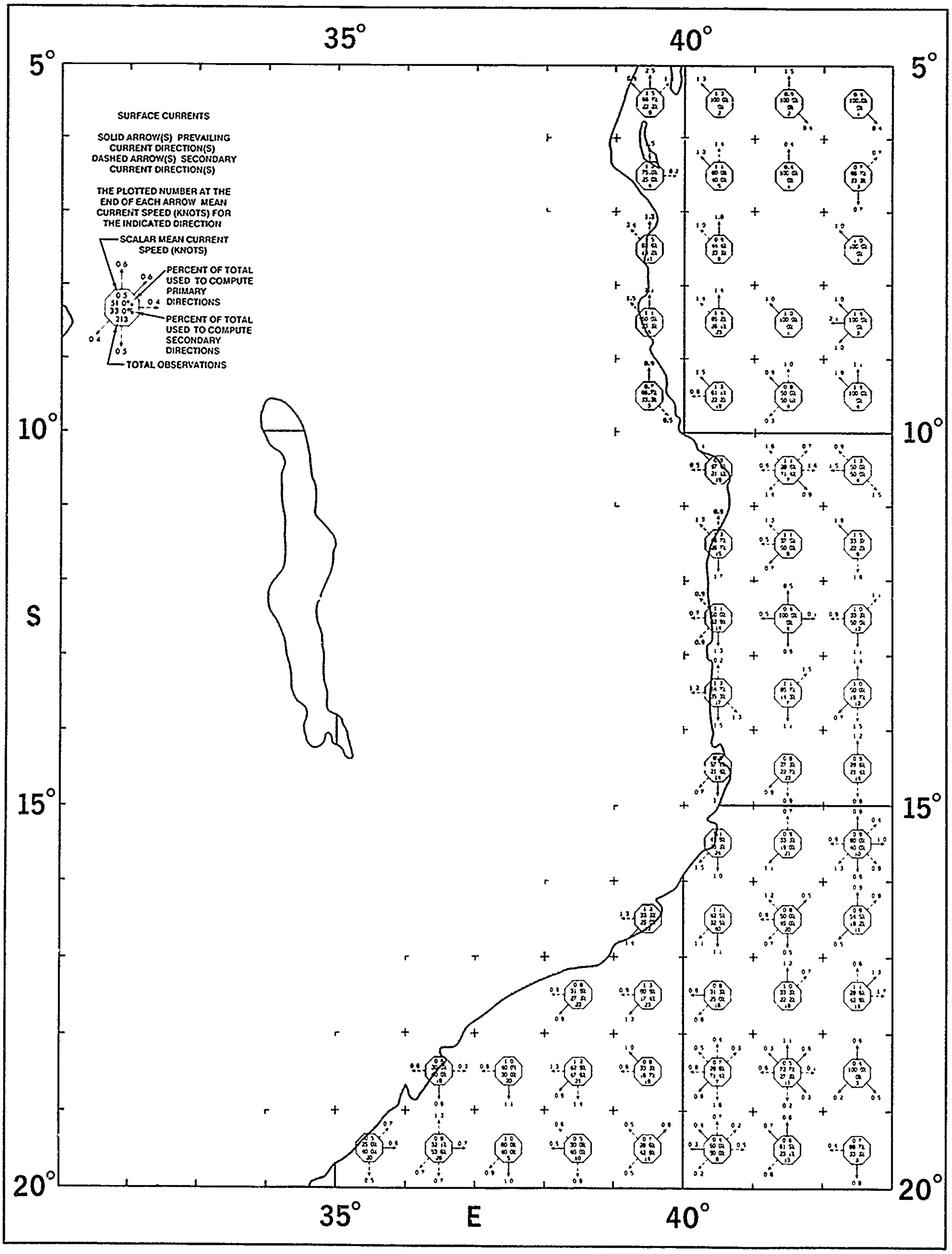
July Wave Height

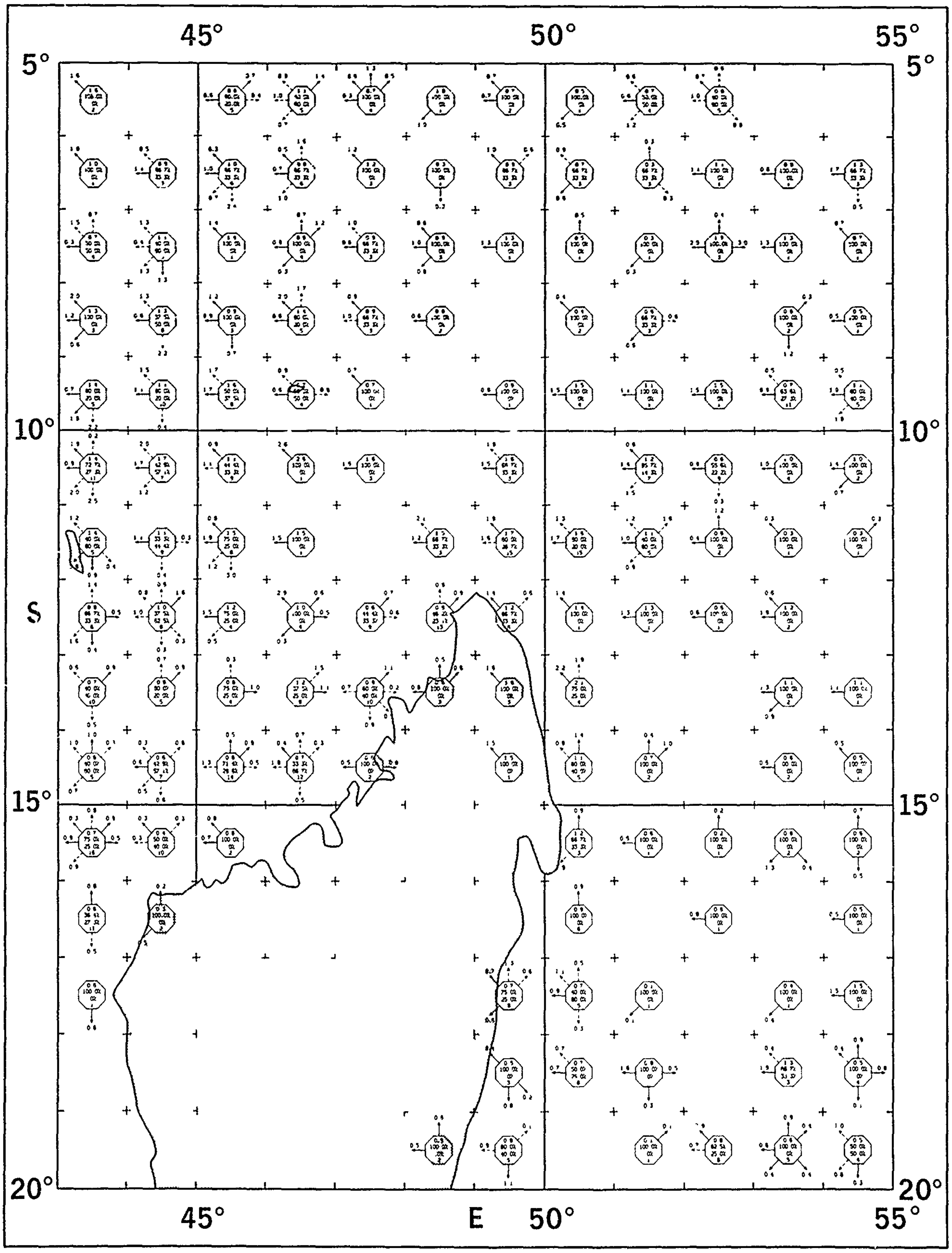


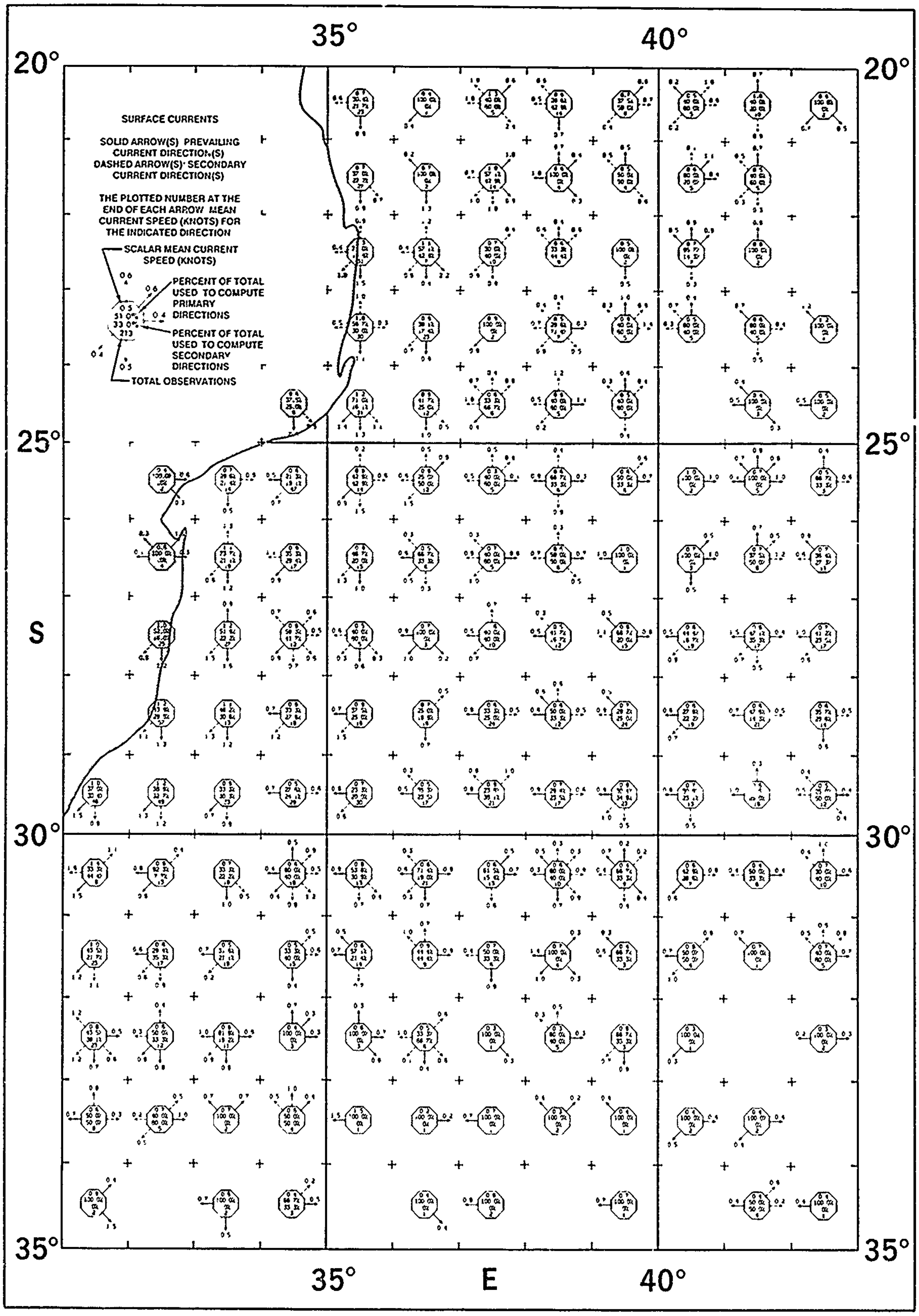
July

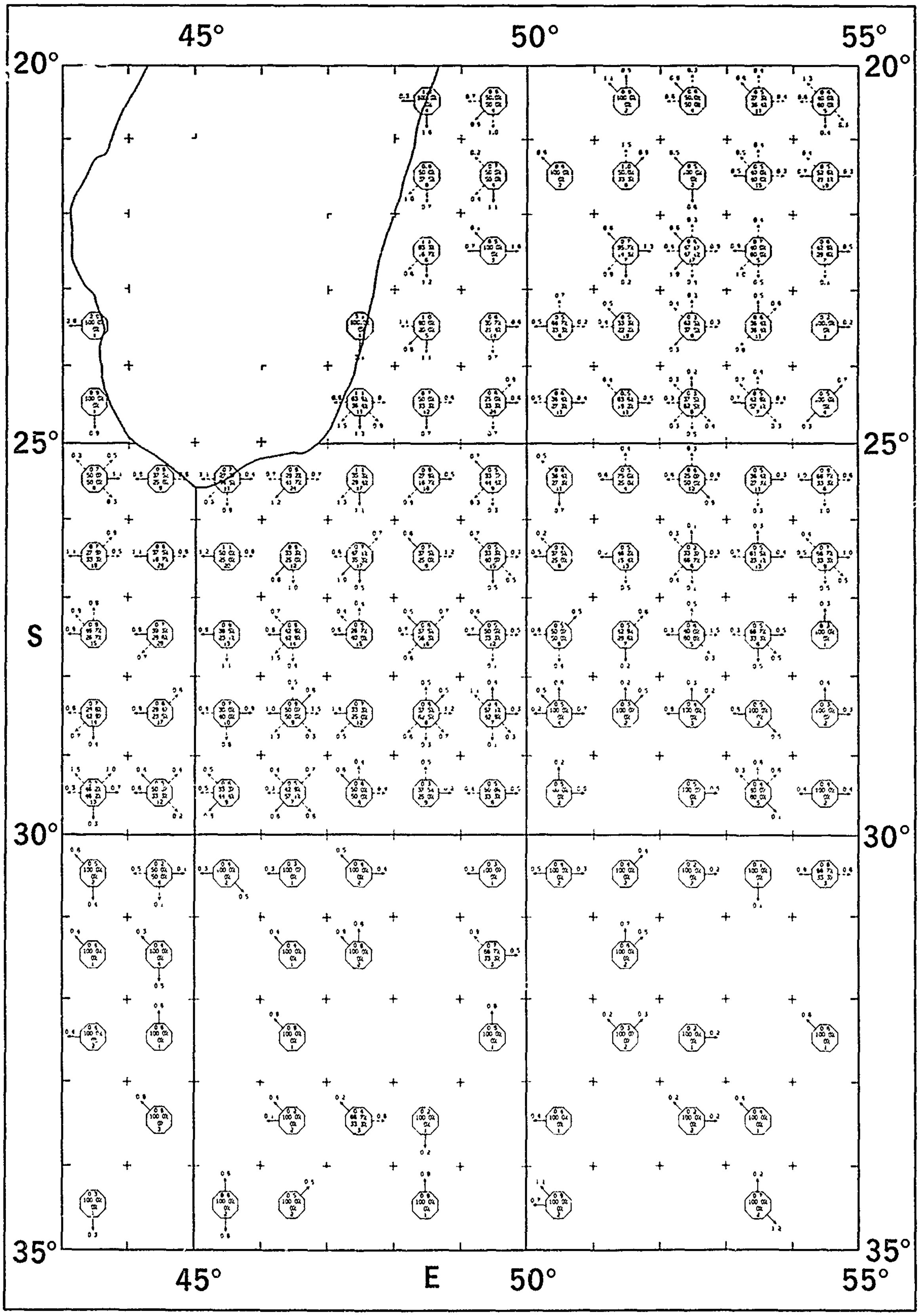
Wave Height

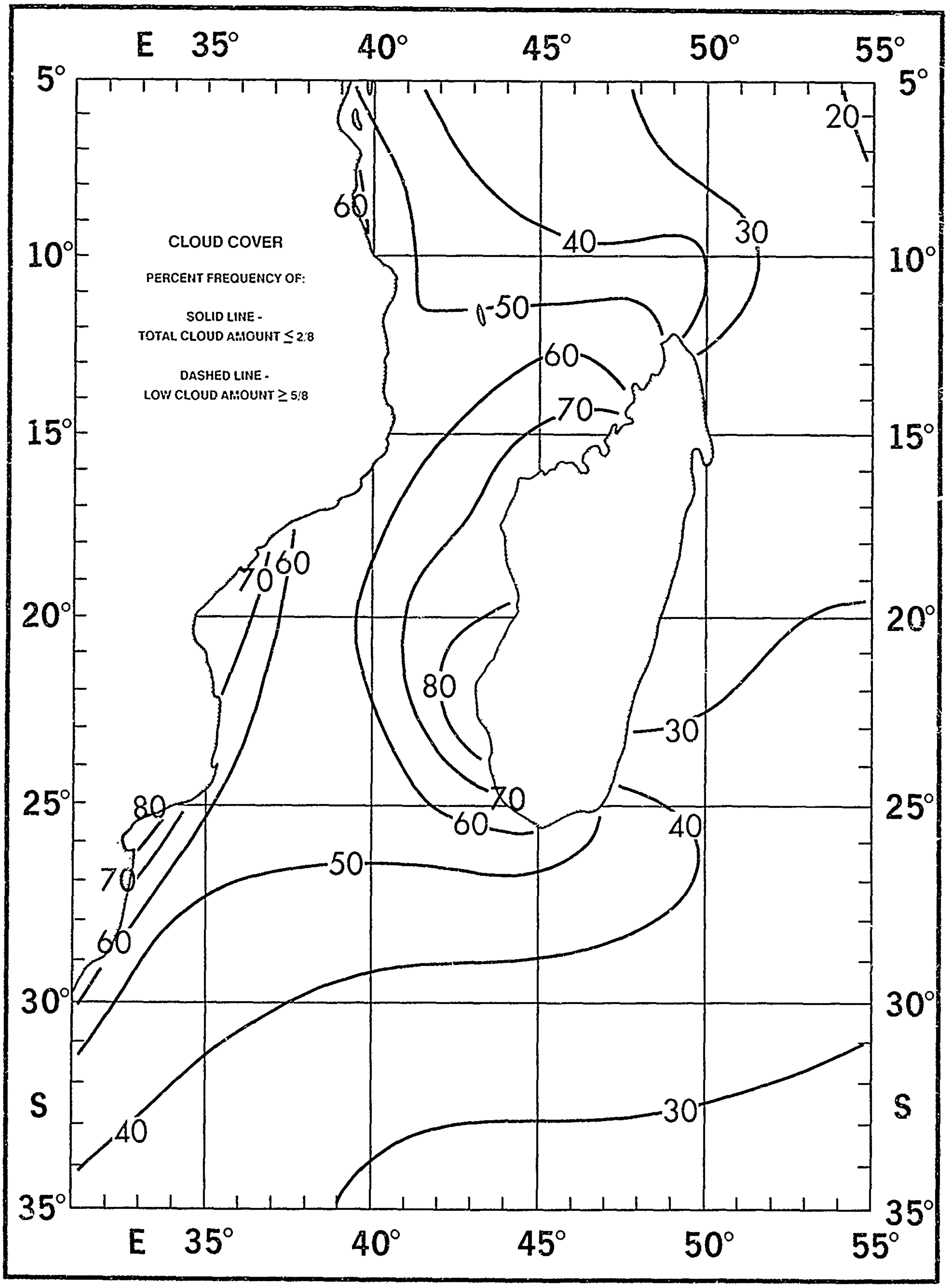


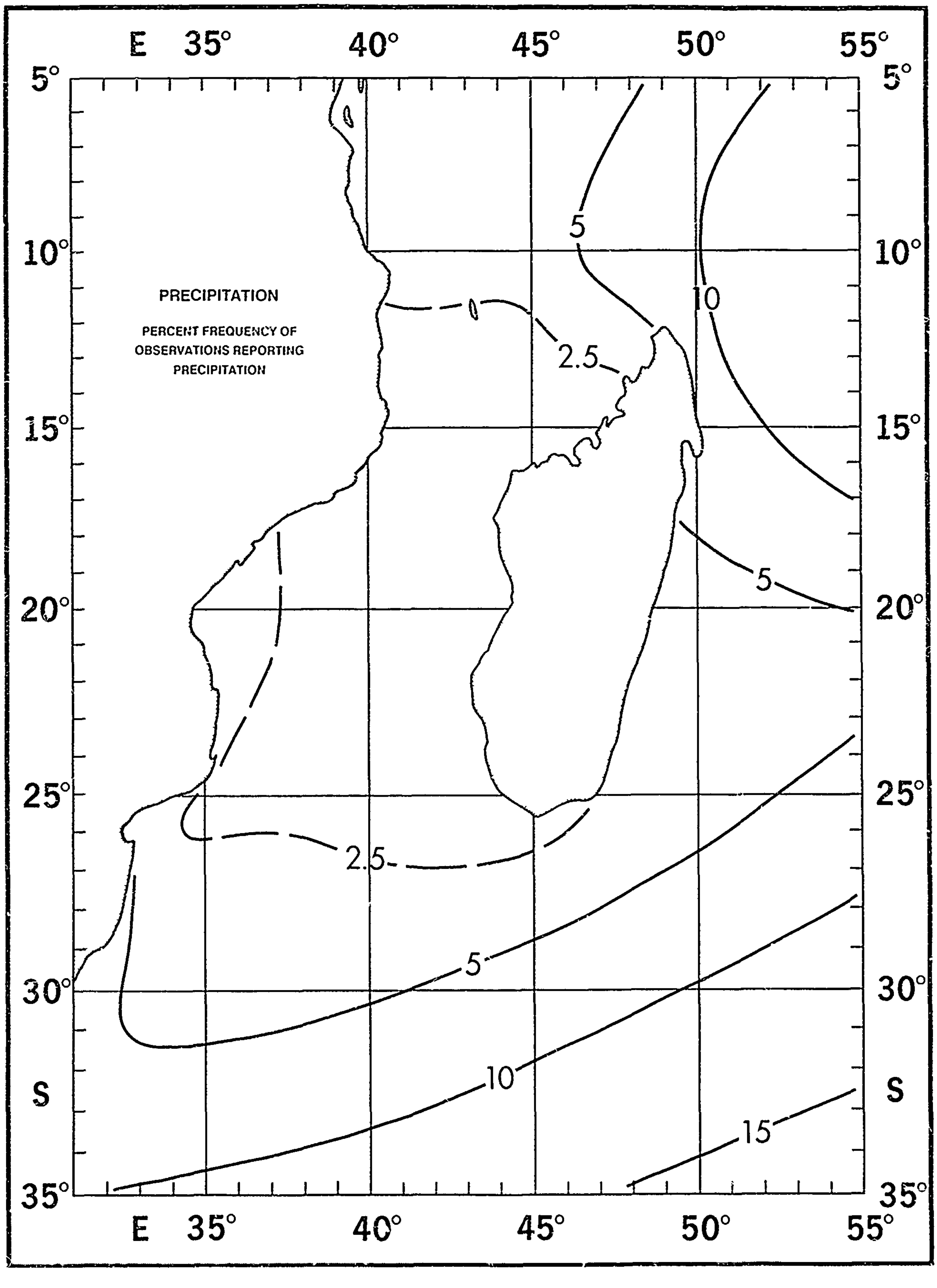

SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS
35°
40°
5°
10°
15°
20°
S
E

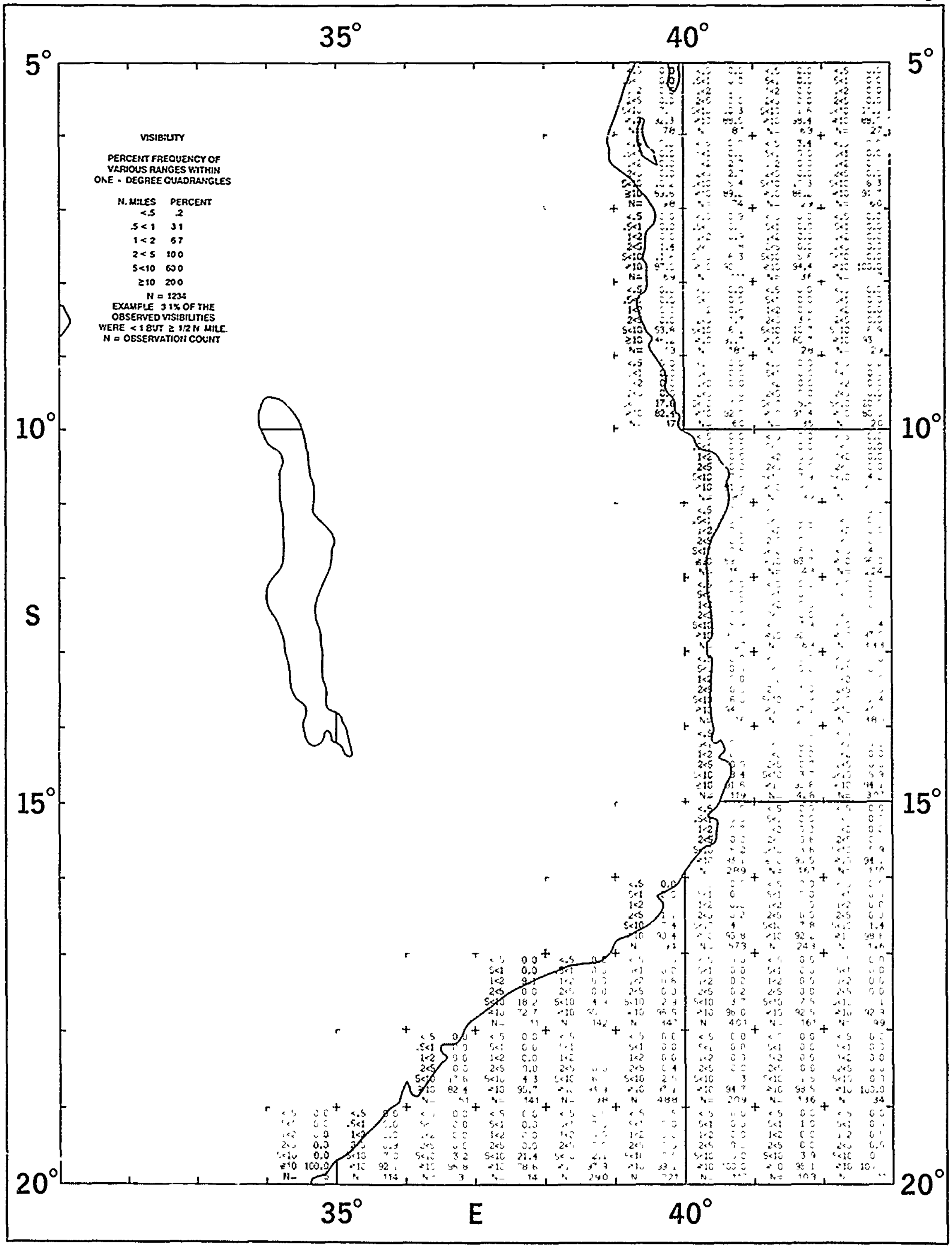

45°
50°
55°
5°
10°
15°
20°
S
E


35°
40°
20°
20°
SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS
25°
25°
S
30°
30°
35°
35°
35°
E
40°


45°
50°
55°
20°
25°
30°
35°
S
E

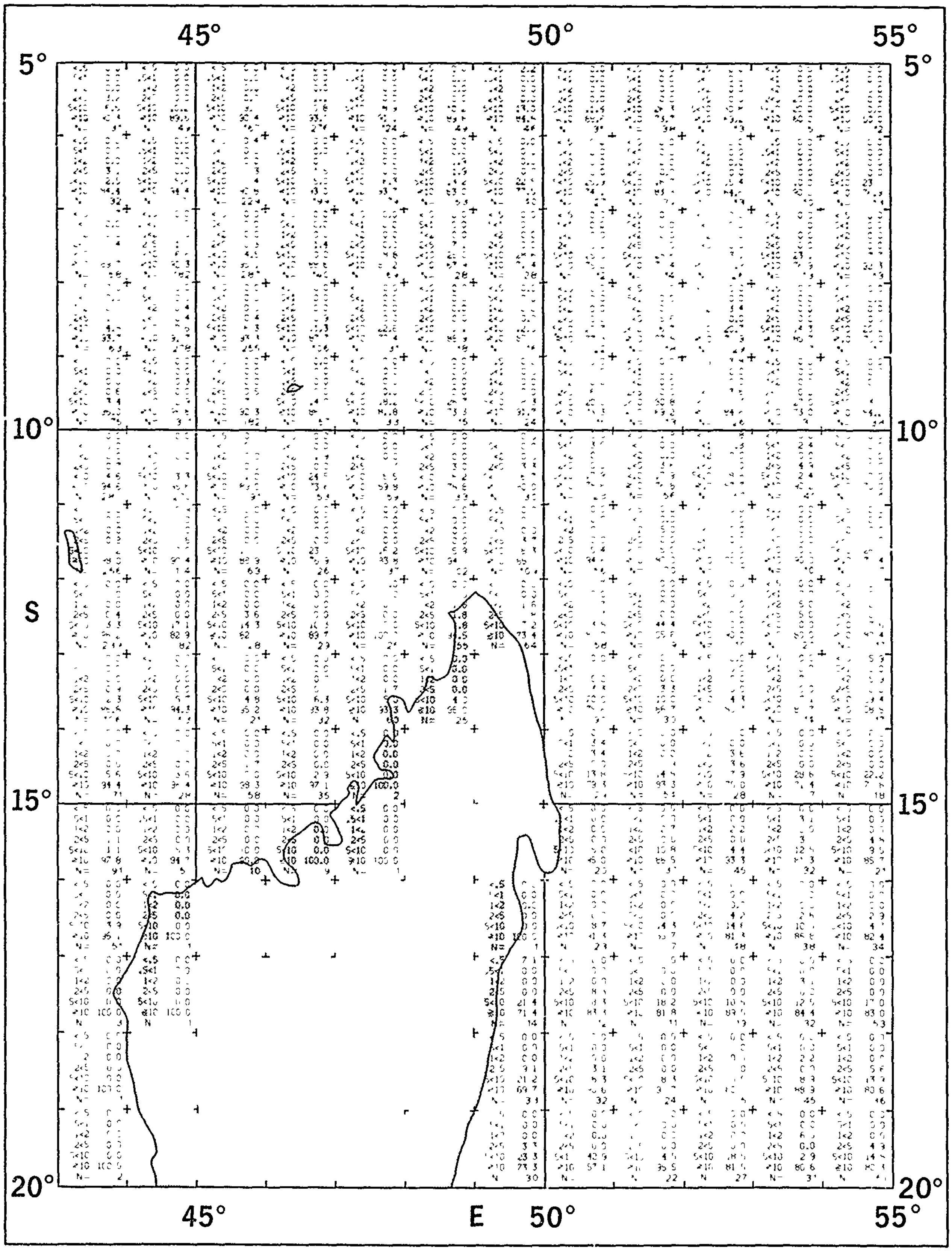

E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
35°
S
CLOUD COVER
PERCENT FREQUENCY OF:
SOLID LINE -
TOTAL CLOUD AMOUNT ≤ 2/8
DASHED LINE -
LOW CLOUD AMOUNT ≥ 5/8
20
30
40
50
60
70
80
60
70
60
50
40
30
40
30
40
80
70
60

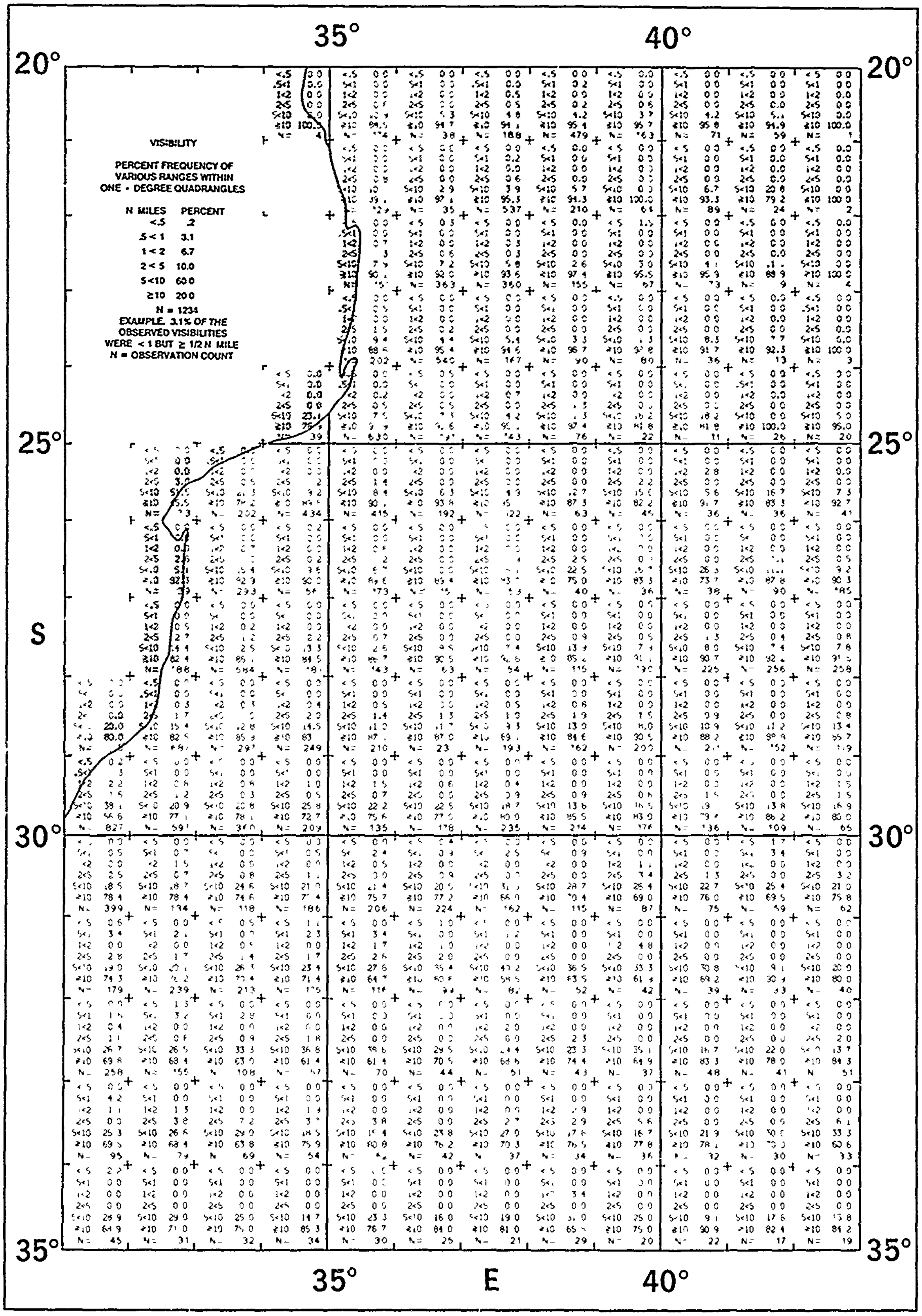

E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
PRECIPITATION
PERCENT FREQUENCY OF OBSERVATIONS REPORTING PRECIPITATION
5
10
2.5
5
2.5
5
10
15


35°
40°
5°
10°
S
15°
20°
E
VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N. MILES PERCENT
<.5 .2
.5<1 3.1
1<2 6.7
2<5 10.0
5<10 63.0
≥10 20.0
N = 1234
EXAMPLE 3.1% OF THE OBSERVED VISIBILITIES WERE <1 BUT ≥ 1/2 N MILE.
N = OBSERVATION COUNT

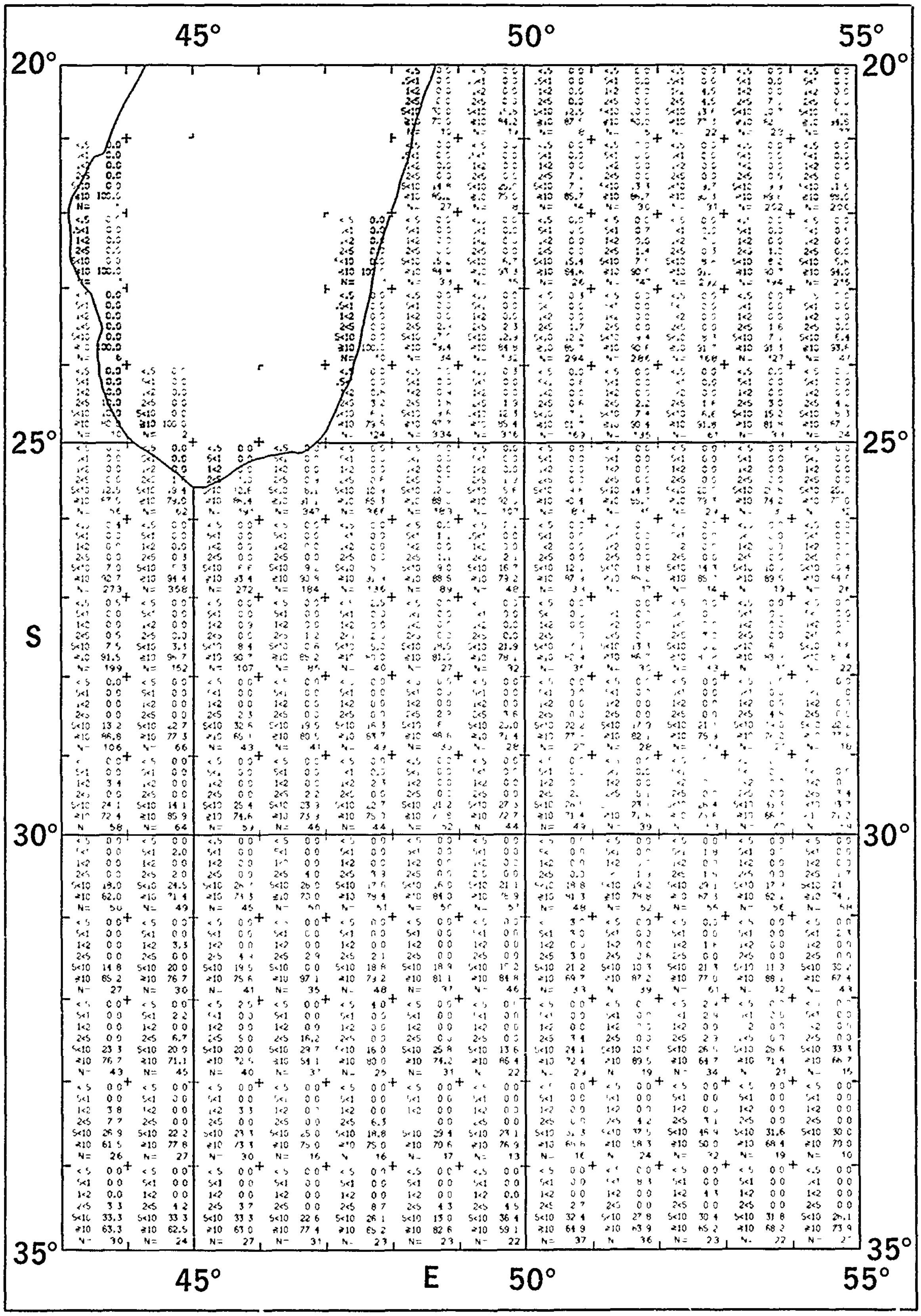
August

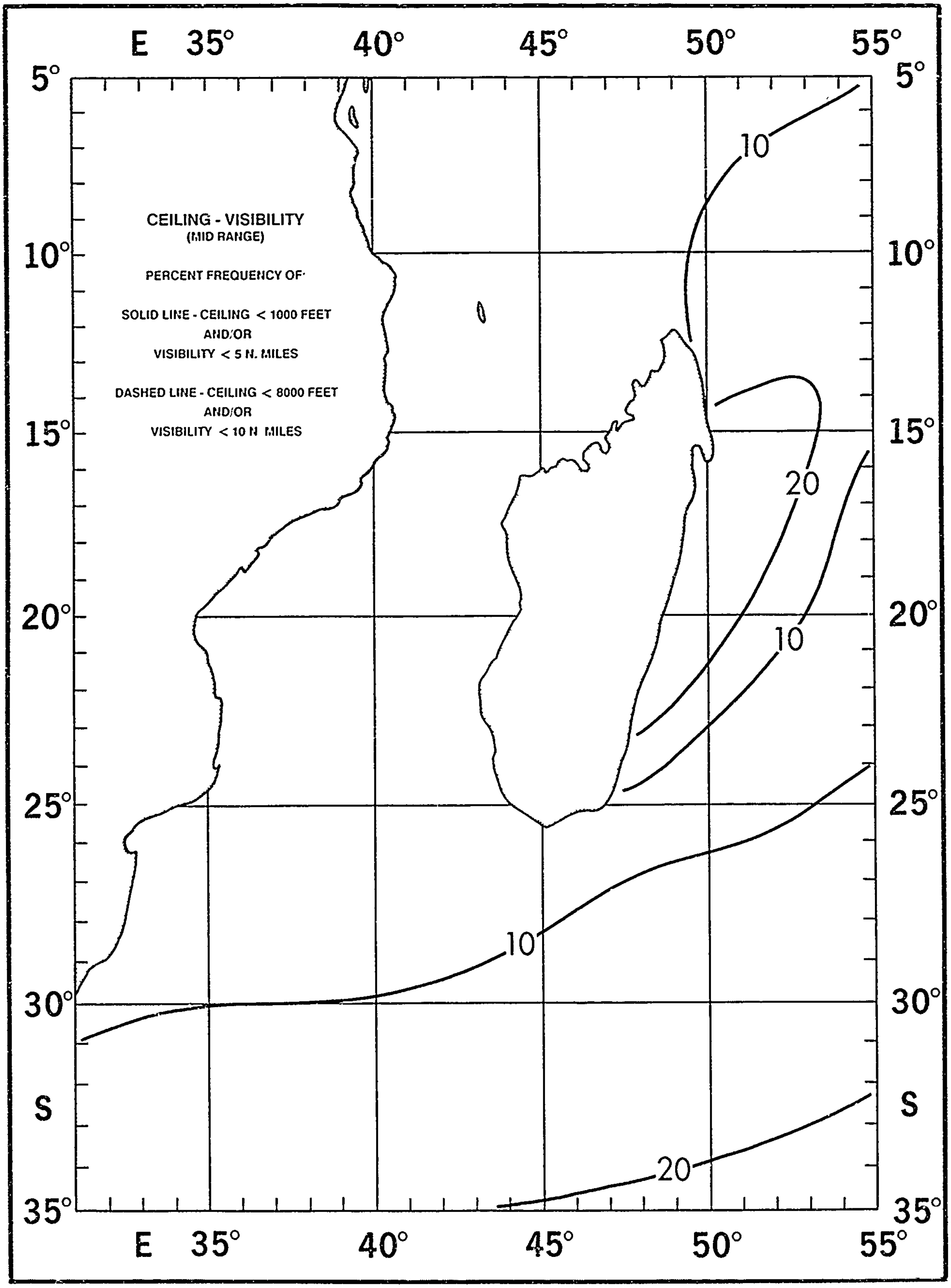
Visibility

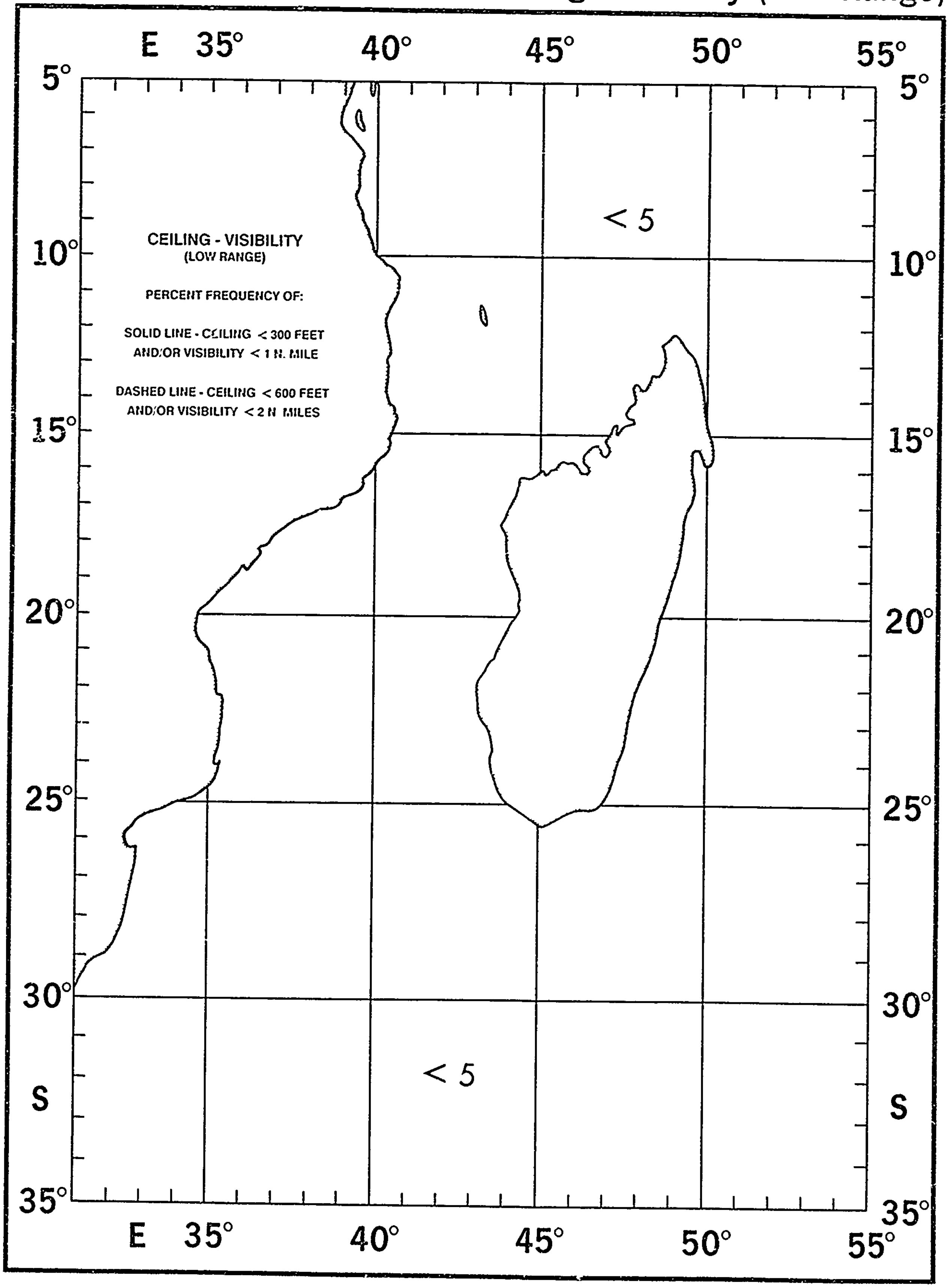


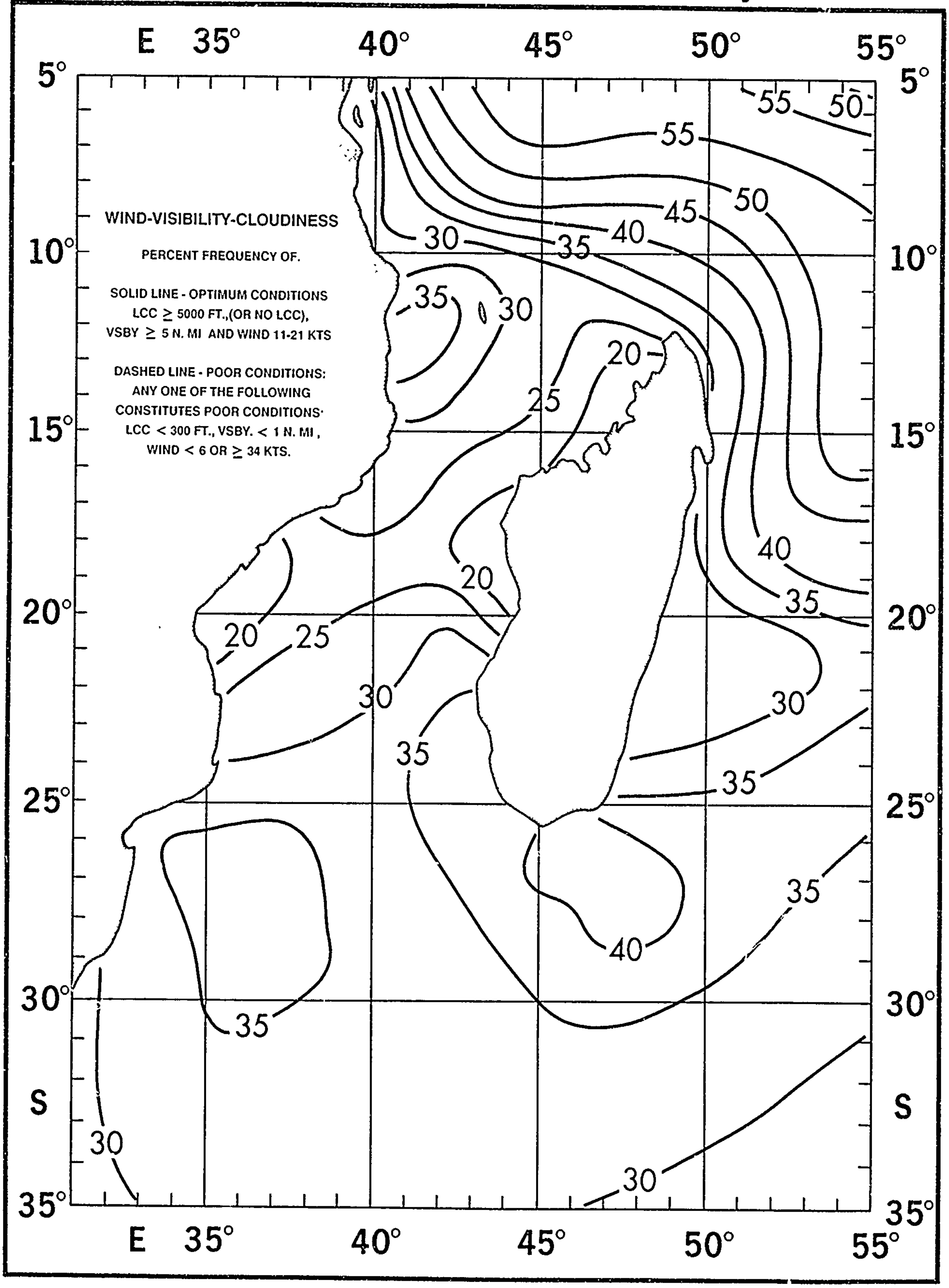

35°
40°
20°
25°
30°
35°
S
E
VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
<.5 .2
.5<1 3.1
1<2 6.7
2<5 10.0
5<10 60.0
≥10 20.0
N = 1234
EXAMPLE. 3.1% OF THE OBSERVED VISIBILITIES WERE <1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT

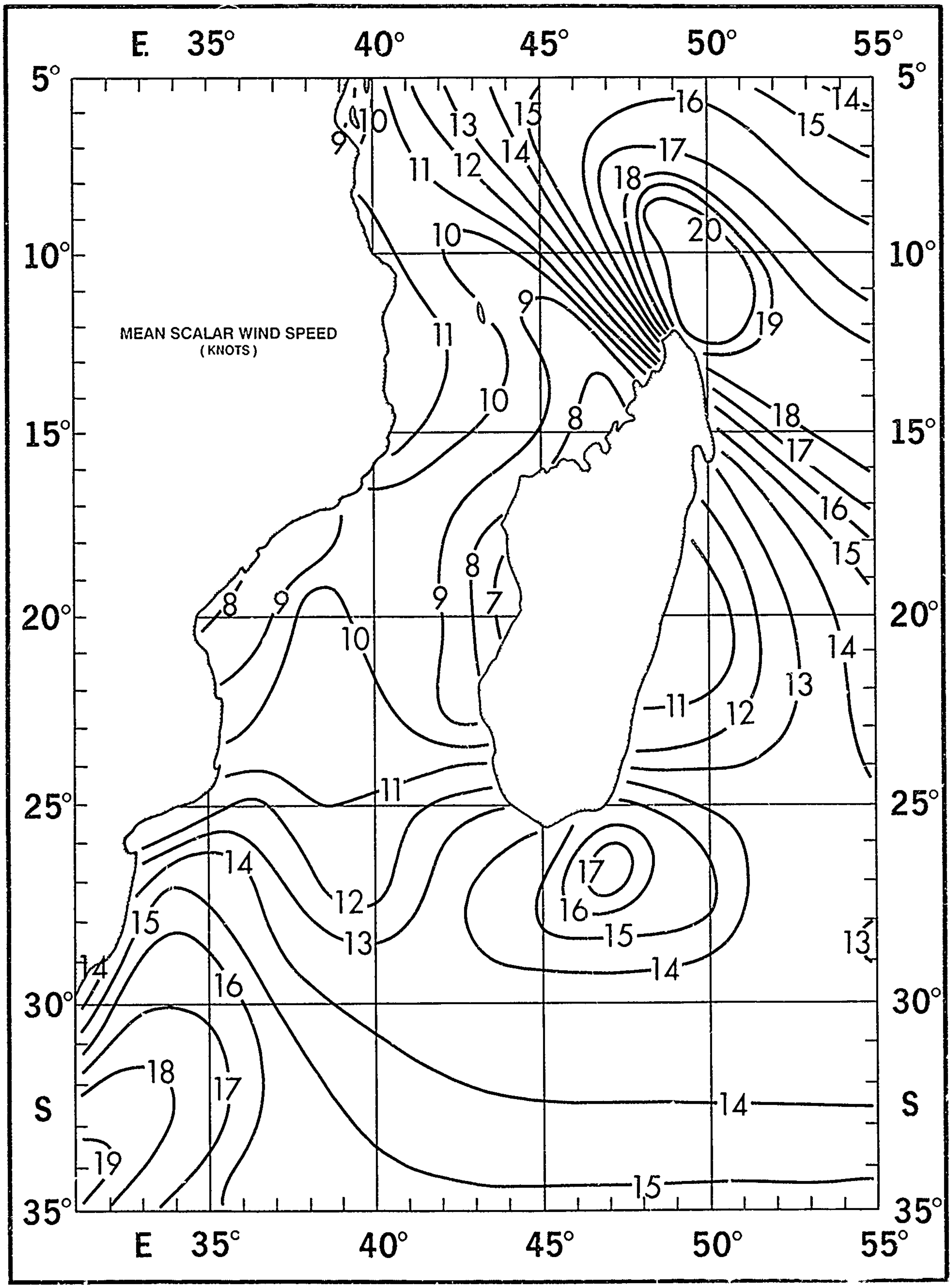
August **Visibility**



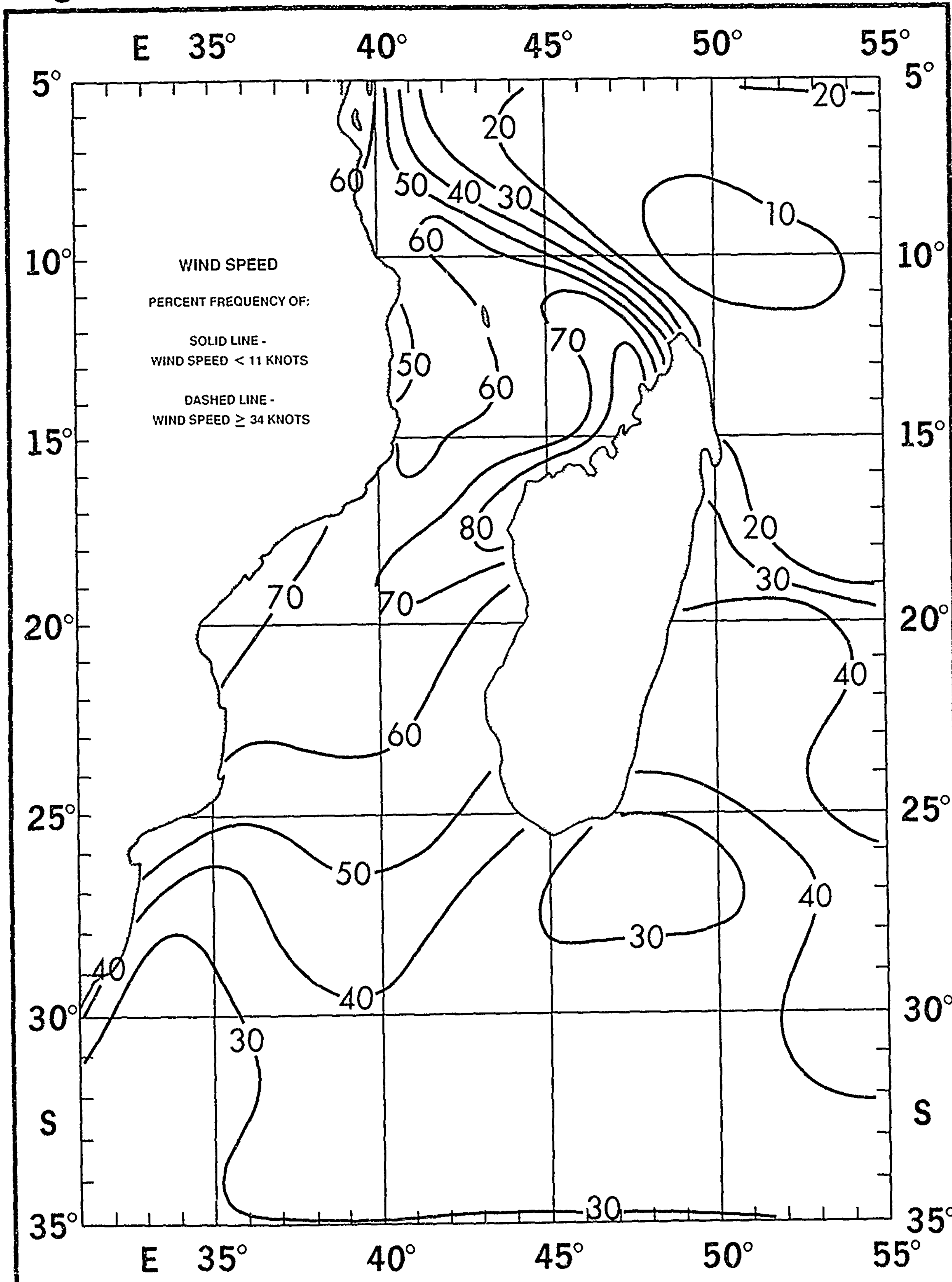

E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
CEILING - VISIBILITY
(MID RANGE)
PERCENT FREQUENCY OF
SOLID LINE - CEILING < 1000 FEET
AND/OR
VISIBILITY < 5 N. MILES
DASHED LINE - CEILING < 8000 FEET
AND/OR
VISIBILITY < 10 N MILES
10
20
10
10
20


E 35°
40°
45°
50°
55°
5°
10°
15°
20°
25°
30°
35°
S
CEILING - VISIBILITY
(LOW RANGE)
PERCENT FREQUENCY OF:
SOLID LINE - CEILING < 300 FEET
AND/OR VISIBILITY < 1 N. MILE
DASHED LINE - CEILING < 600 FEET
AND/OR VISIBILITY < 2 N MILES
< 5
< 5

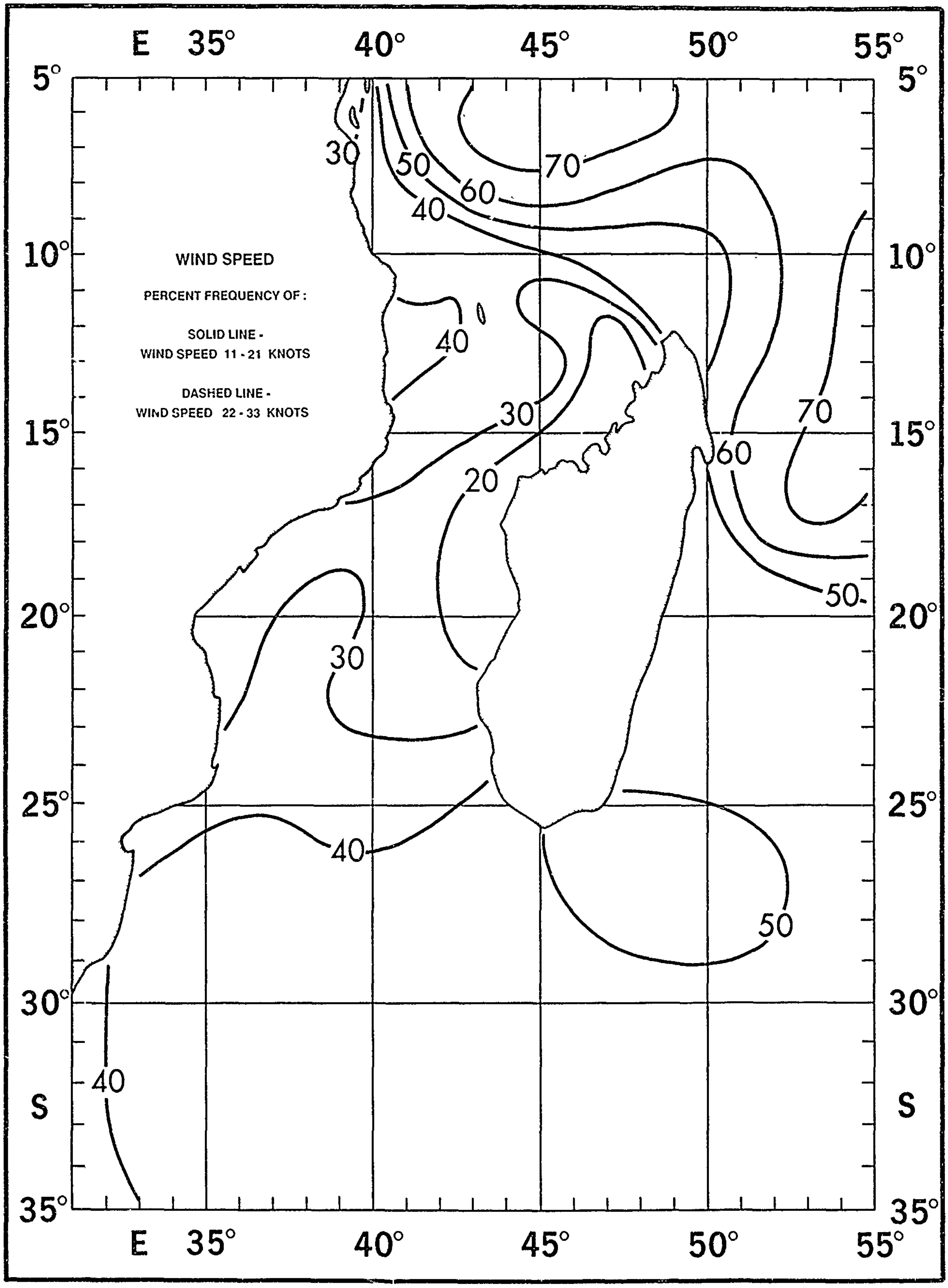

E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
WIND-VISIBILITY-CLOUDINESS
PERCENT FREQUENCY OF.
SOLID LINE - OPTIMUM CONDITIONS
LCC ≥ 5000 FT.,(OR NO LCC),
VSBY ≥ 5 N. MI AND WIND 11-21 KTS
DASHED LINE - POOR CONDITIONS:
ANY ONE OF THE FOLLOWING
CONSTITUTES POOR CONDITIONS:
LCC < 300 FT., VSBY. < 1 N. MI,
WIND < 6 OR ≥ 34 KTS.
55
50
45
40
35
30
25
20

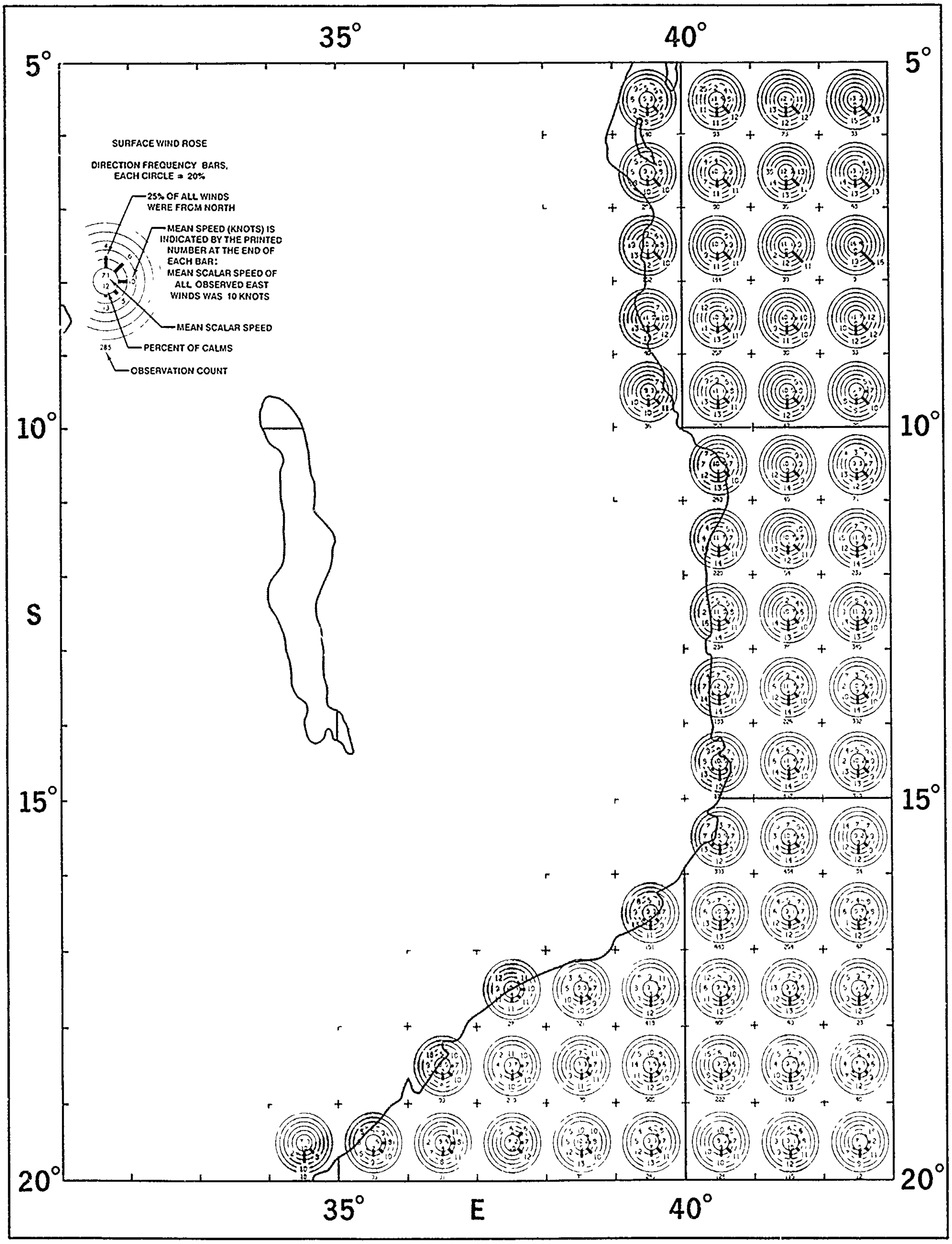

MEAN SCALAR WIND SPEED
(KNOTS)
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°

August   Wind Speed <11 and ≥34 Knots

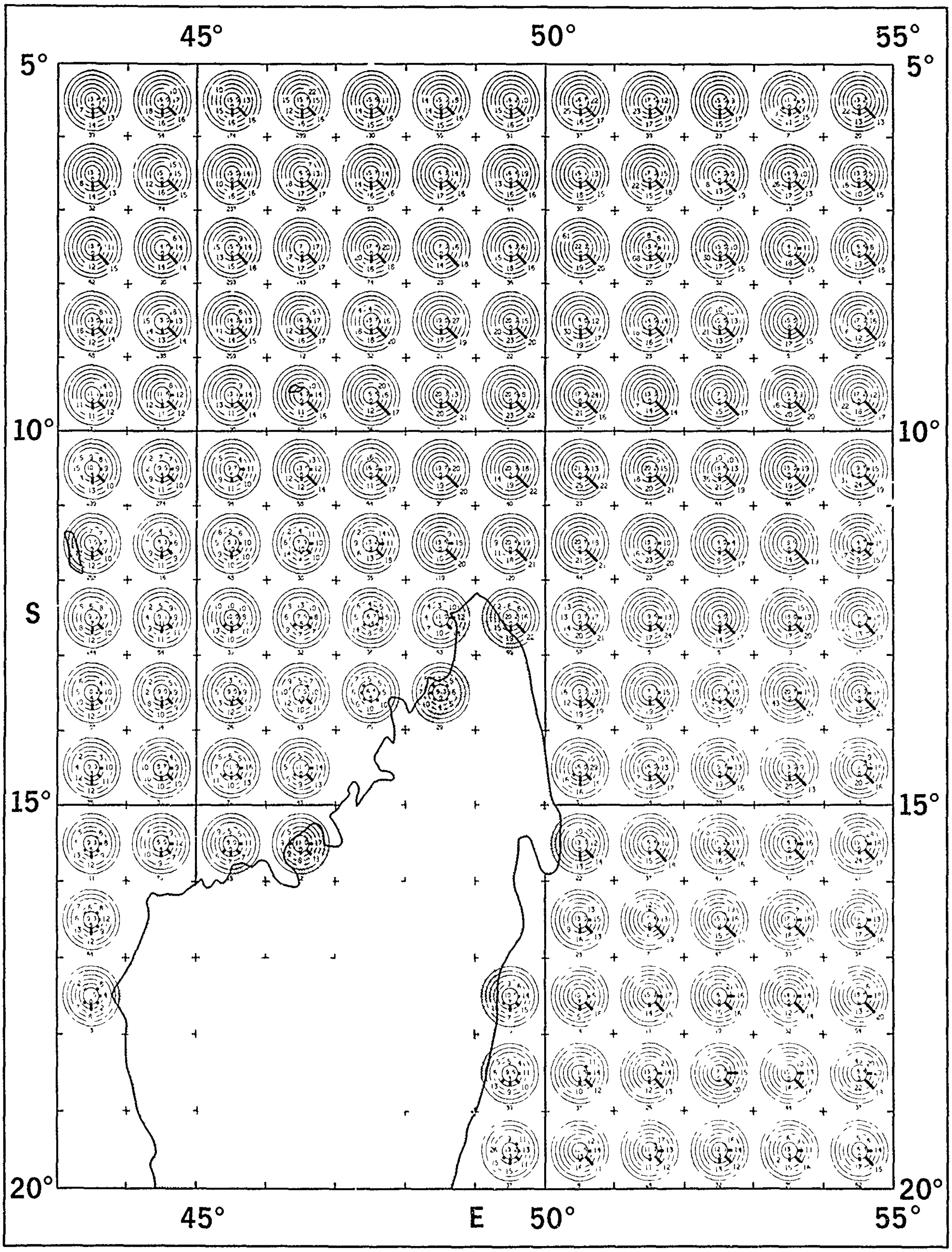


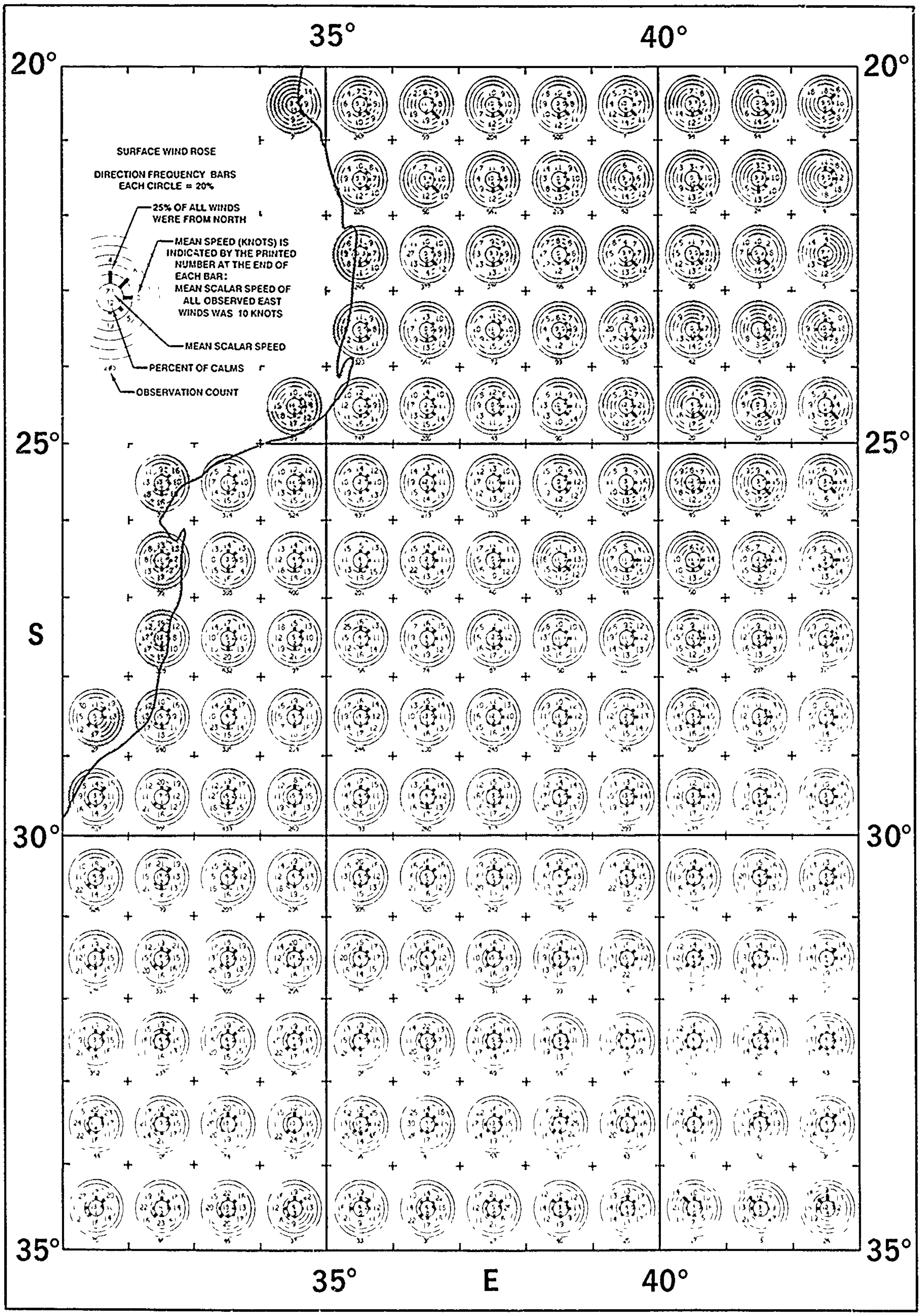
August — Wind Speed 11 - 21 and 22 - 33 Knots

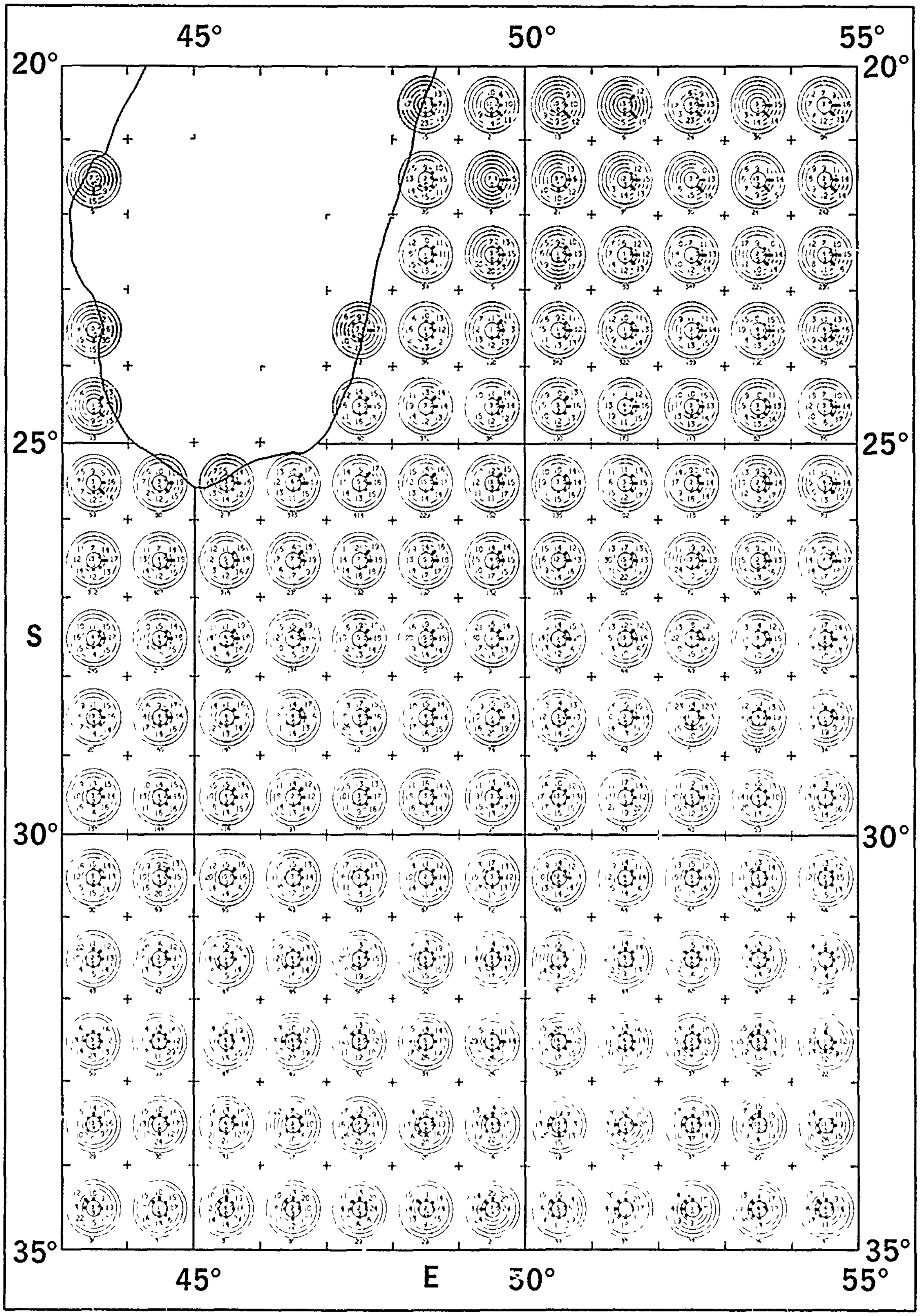


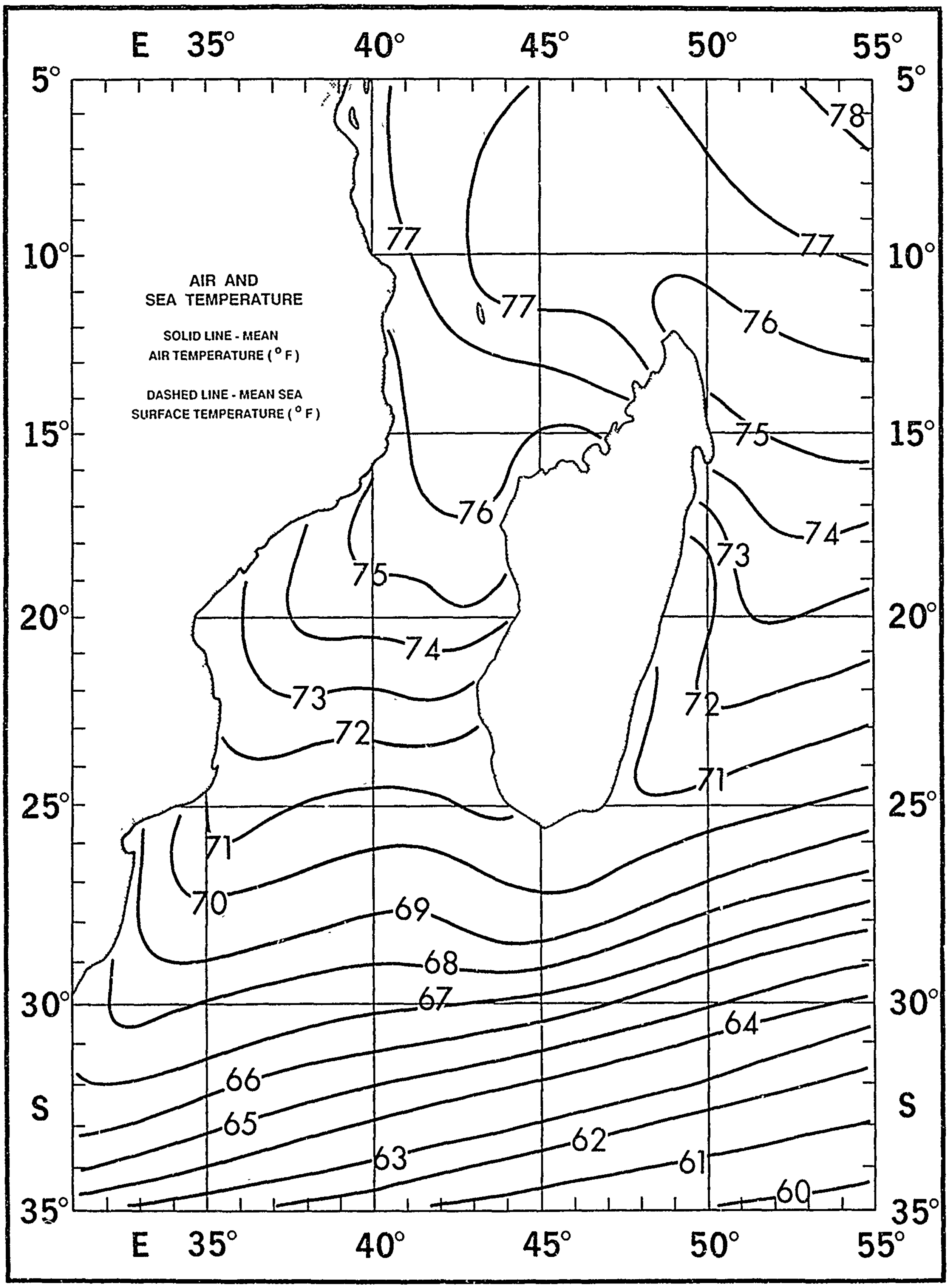

35°
40°
5°
10°
S
15°
20°
E
SURFACE WIND ROSE
DIRECTION FREQUENCY BARS, EACH CIRCLE = 20%
25% OF ALL WINDS WERE FROM NORTH
MEAN SPEED (KNOTS) IS INDICATED BY THE PRINTED NUMBER AT THE END OF EACH BAR:
MEAN SCALAR SPEED OF ALL OBSERVED EAST WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT

August **Surface Wind Roses**




35°
40°
20°
20°
SURFACE WIND ROSE
DIRECTION FREQUENCY BARS
EACH CIRCLE = 20%
25% OF ALL WINDS
WERE FROM NORTH
MEAN SPEED (KNOTS) IS
INDICATED BY THE PRINTED
NUMBER AT THE END OF
EACH BAR:
MEAN SCALAR SPEED OF
ALL OBSERVED EAST
WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT
25°
25°
S
30°
30°
35°
35°
35°
E
40°

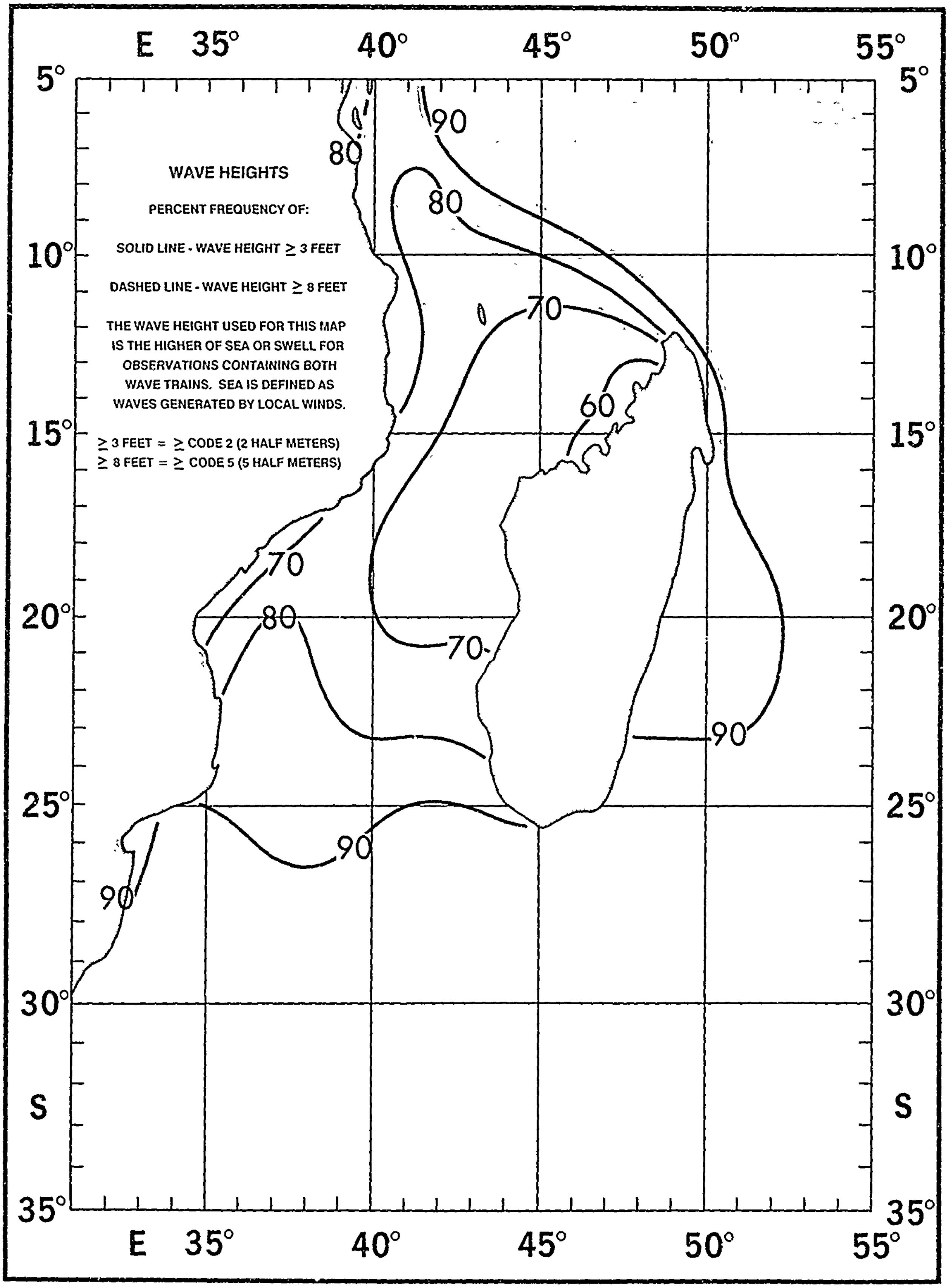

45°
50°
55°
20°
20°
25°
25°
S
30°
30°
35°
35°
45°
E
50°
55°



E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° 35°
S
AIR AND
SEA TEMPERATURE
SOLID LINE - MEAN
AIR TEMPERATURE (° F)
DASHED LINE - MEAN SEA
SURFACE TEMPERATURE (° F)
78
77
77
77
76
76
75
75
74
74
73
73
72
72
71
71
70
69
68
67
66
65
64
63
62
61
60

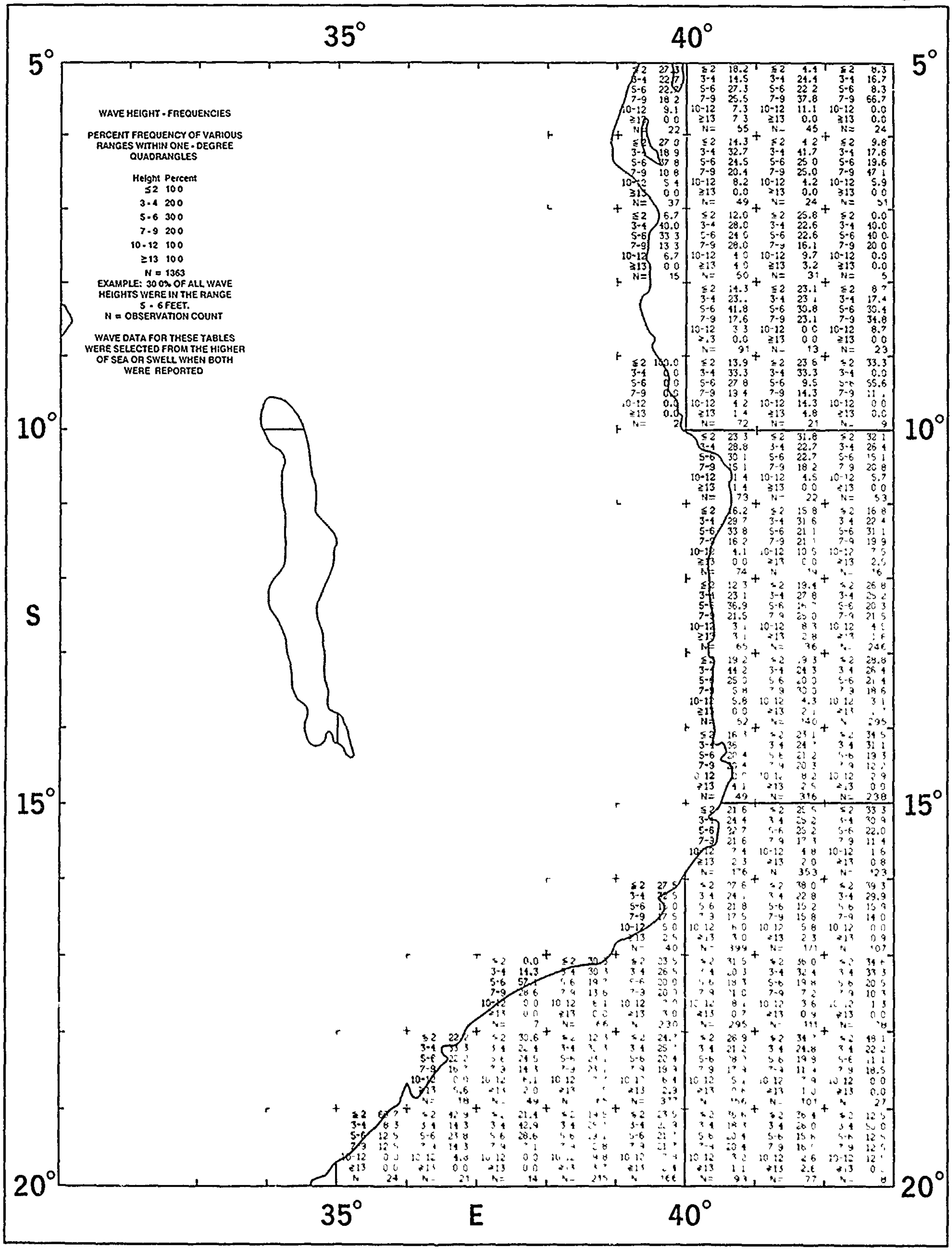
August

Wave Height

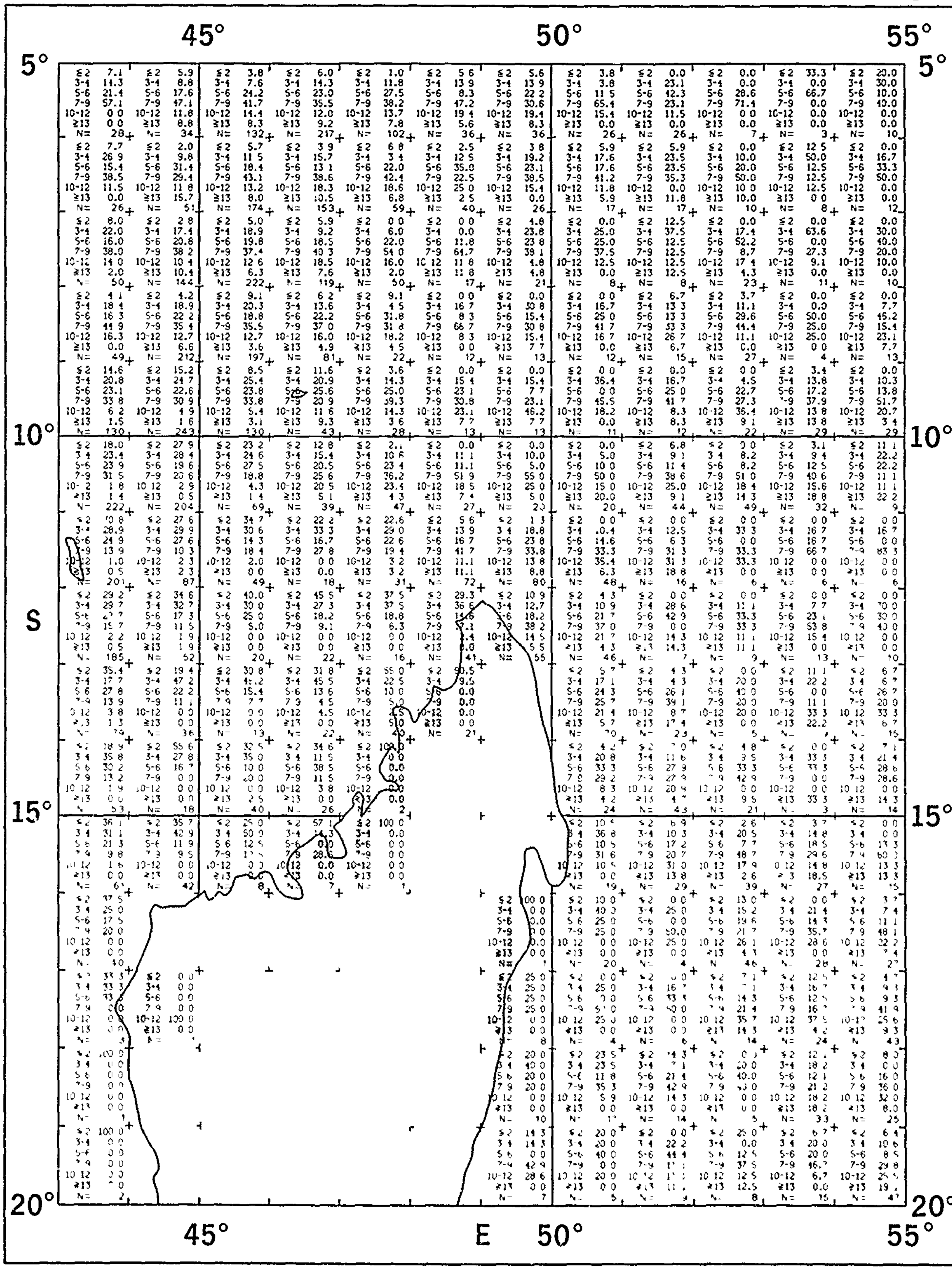


August

Wave Height

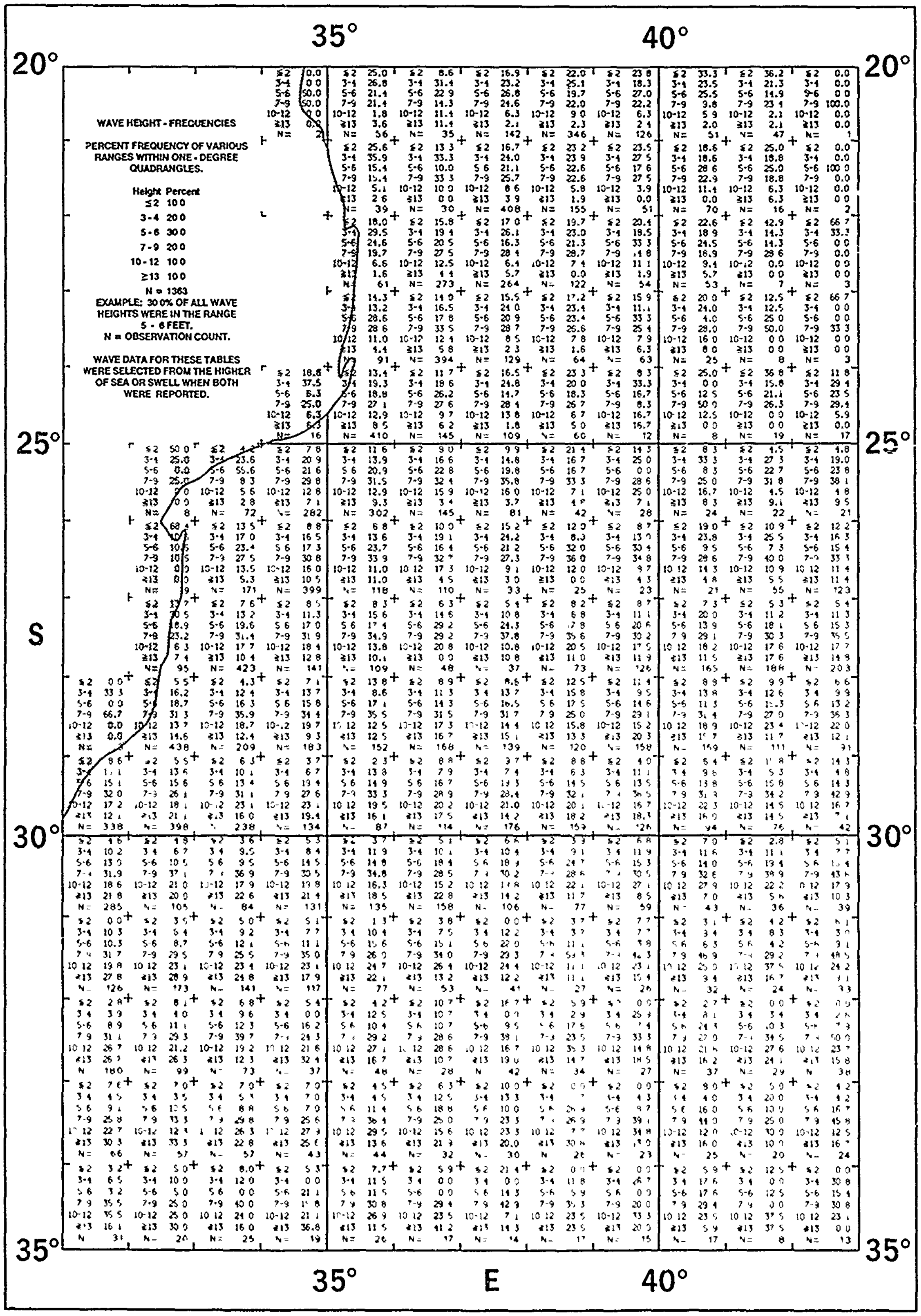


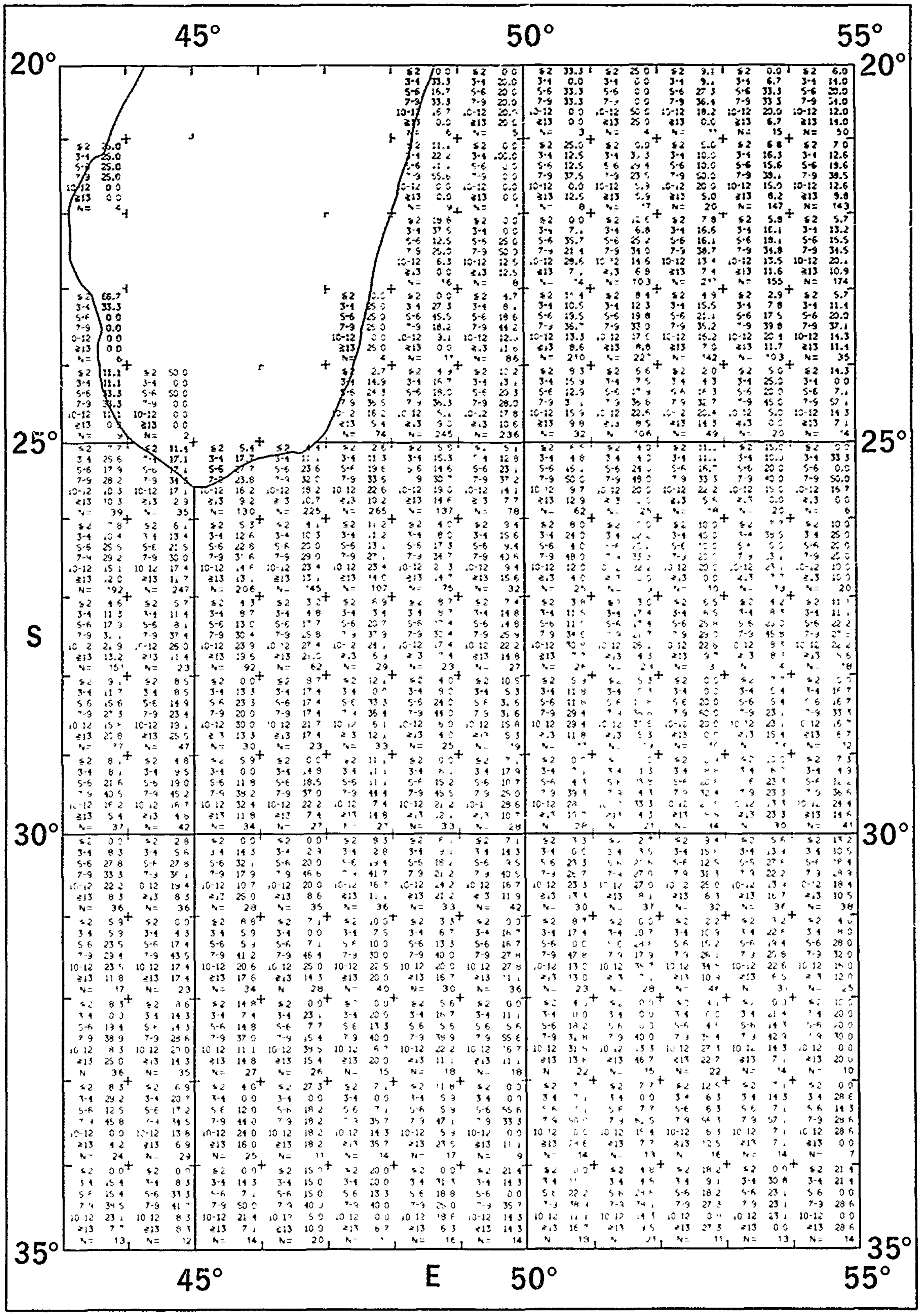
August **Wave Height**

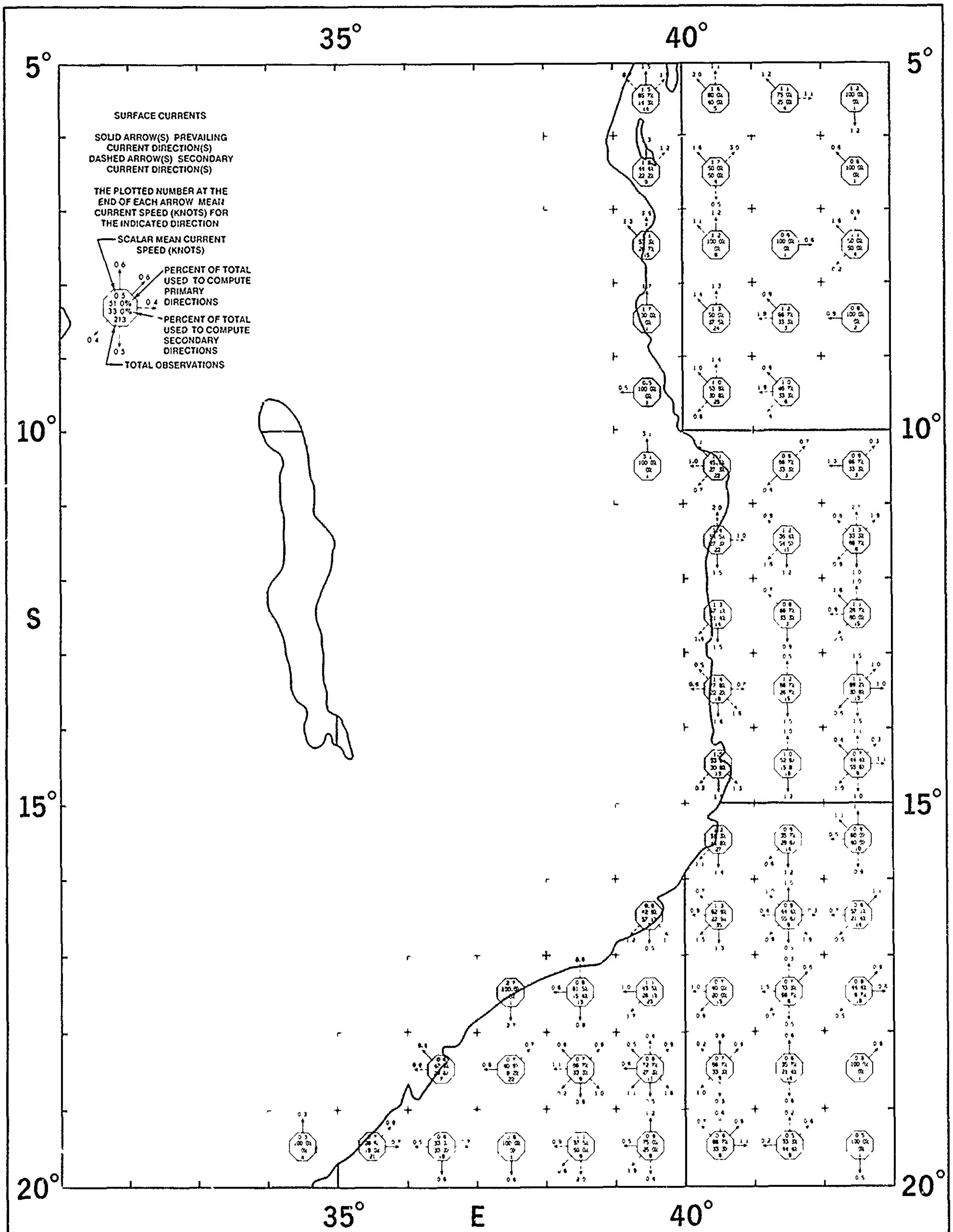


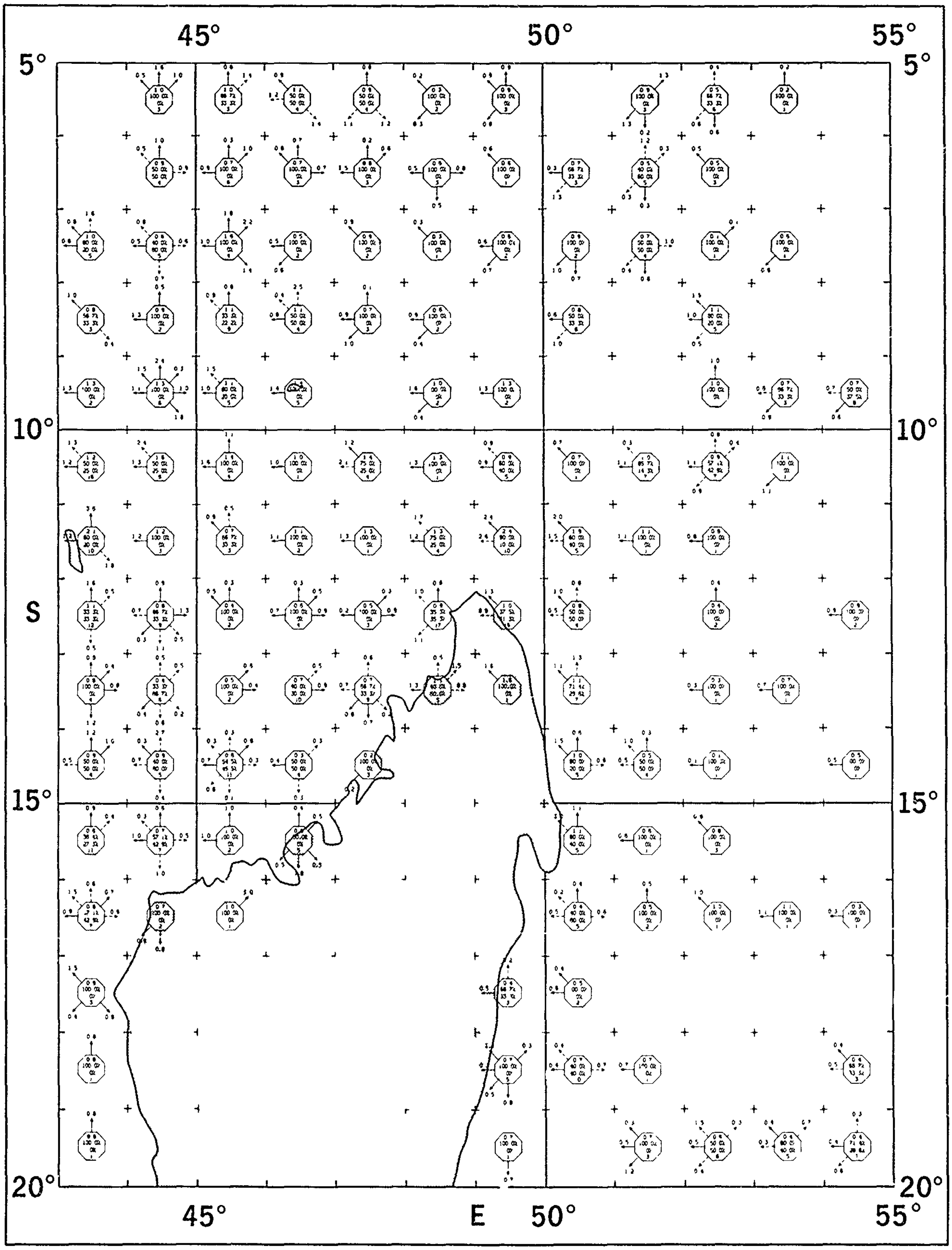
August

Wave Height



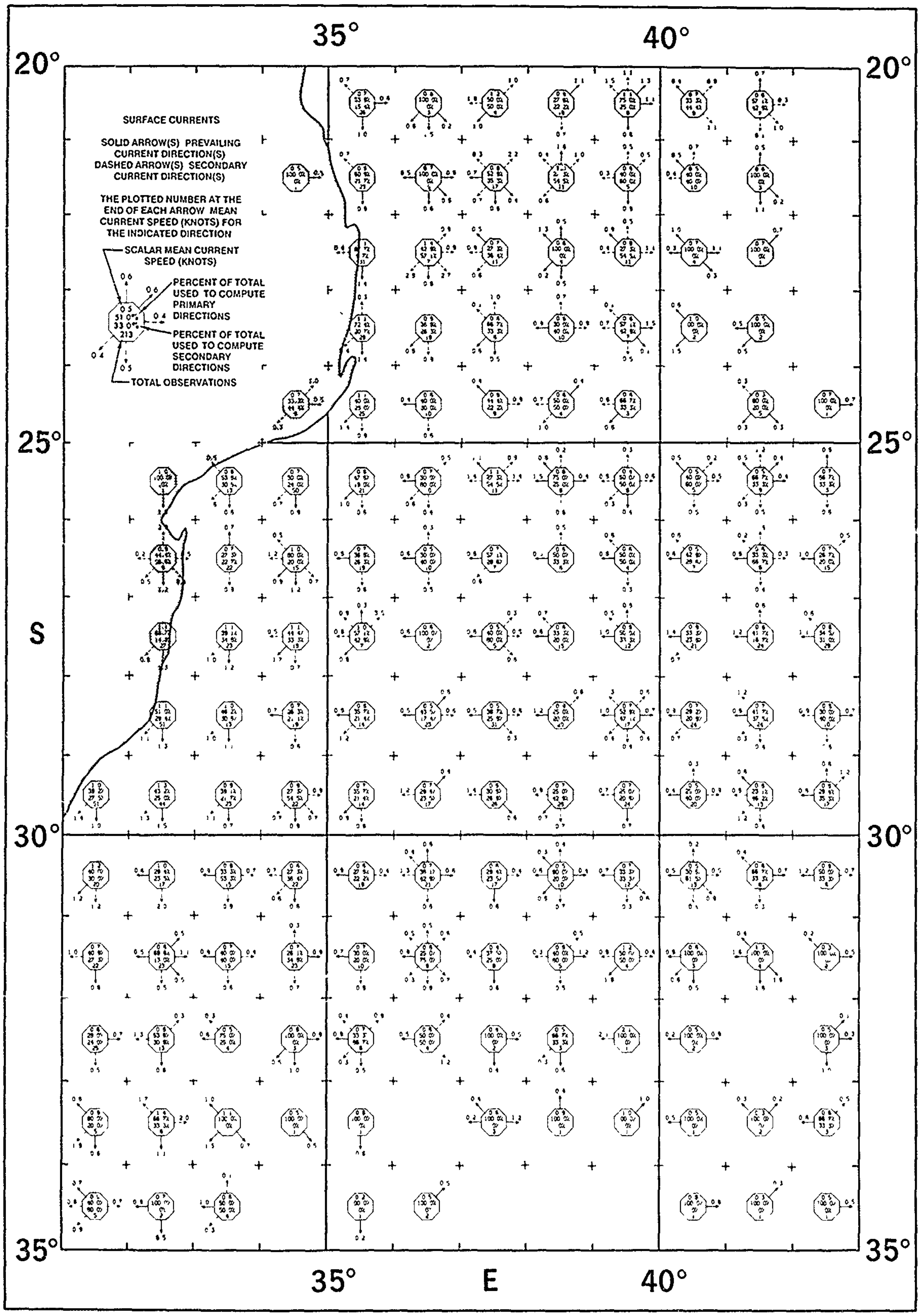

45°
50°
55°
20°
20°
25°
25°
S
30°
30°
35°
35°
45°
E
50°
55°

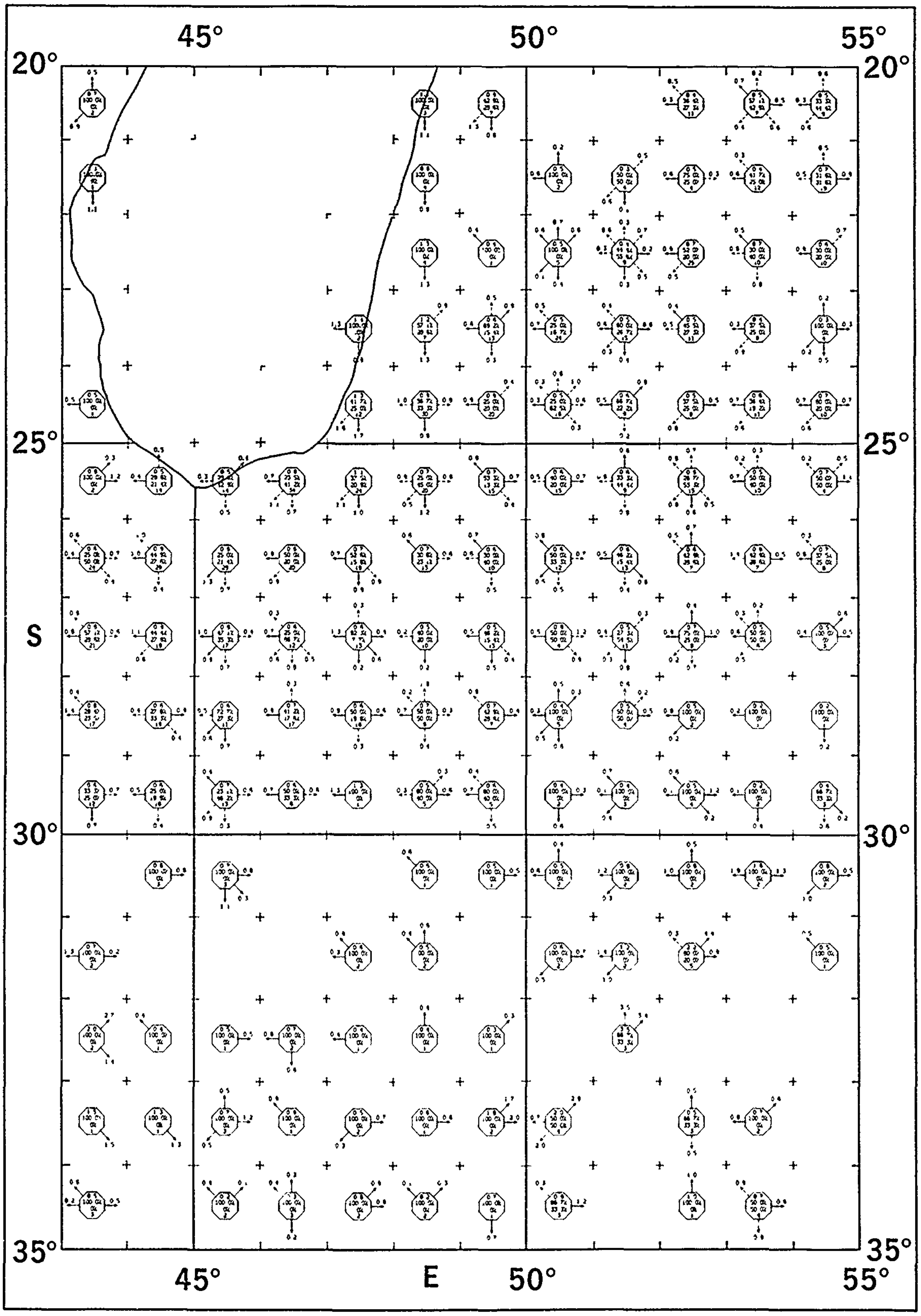

35°
40°
5°
10°
15°
20°
S
E
SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS

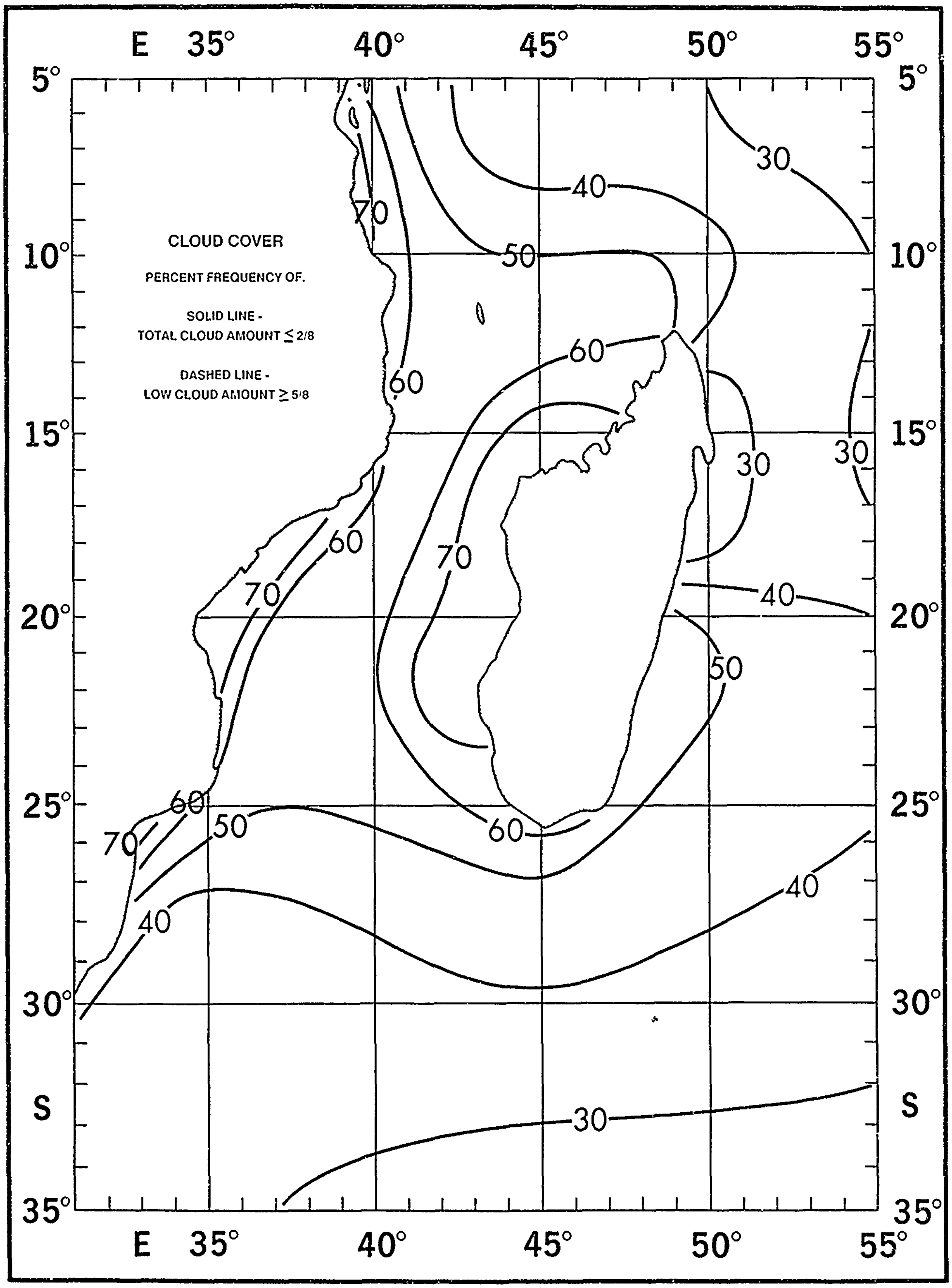

45°
50°
55°
5°
10°
S
15°
20°
E

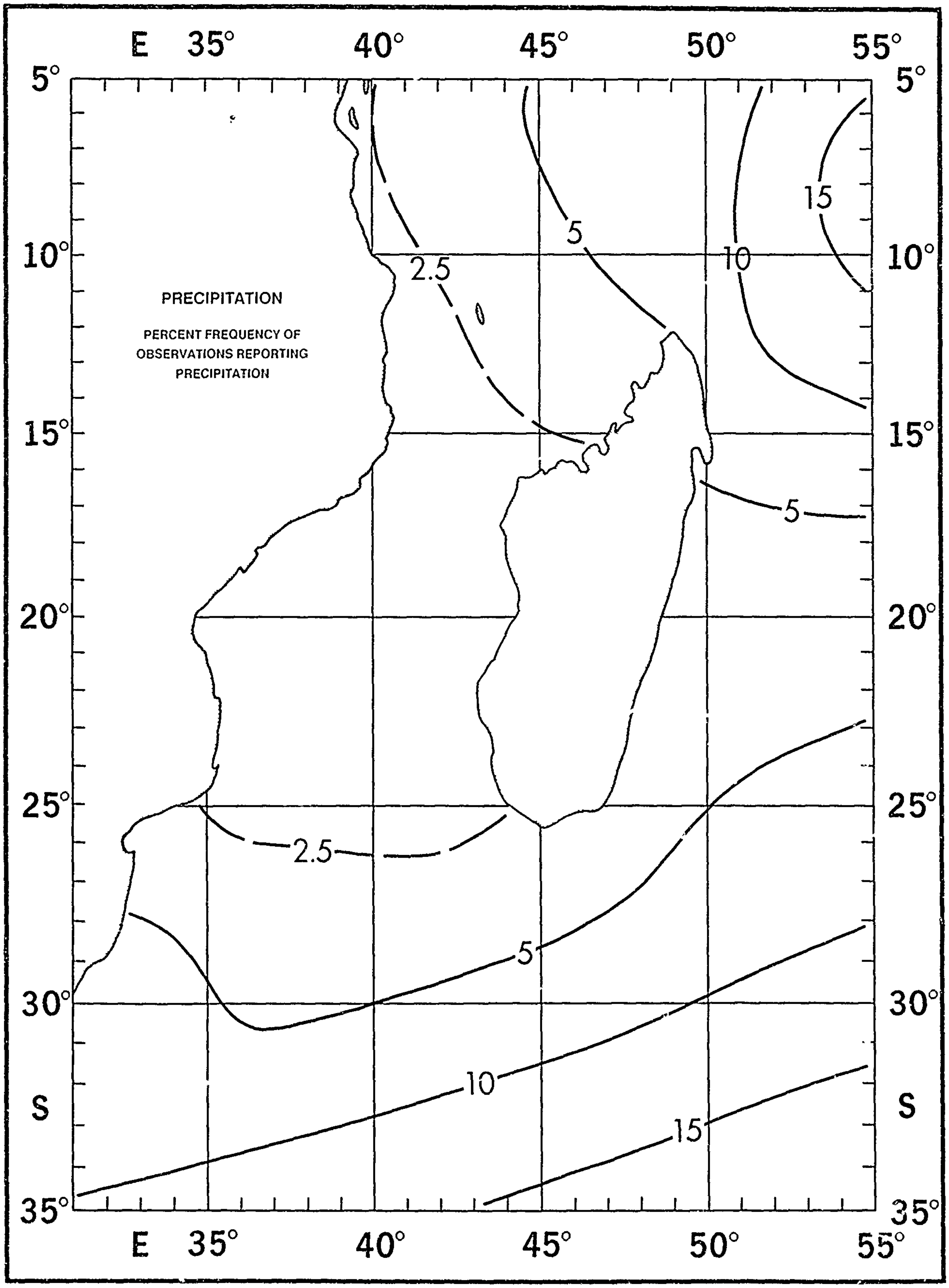
August

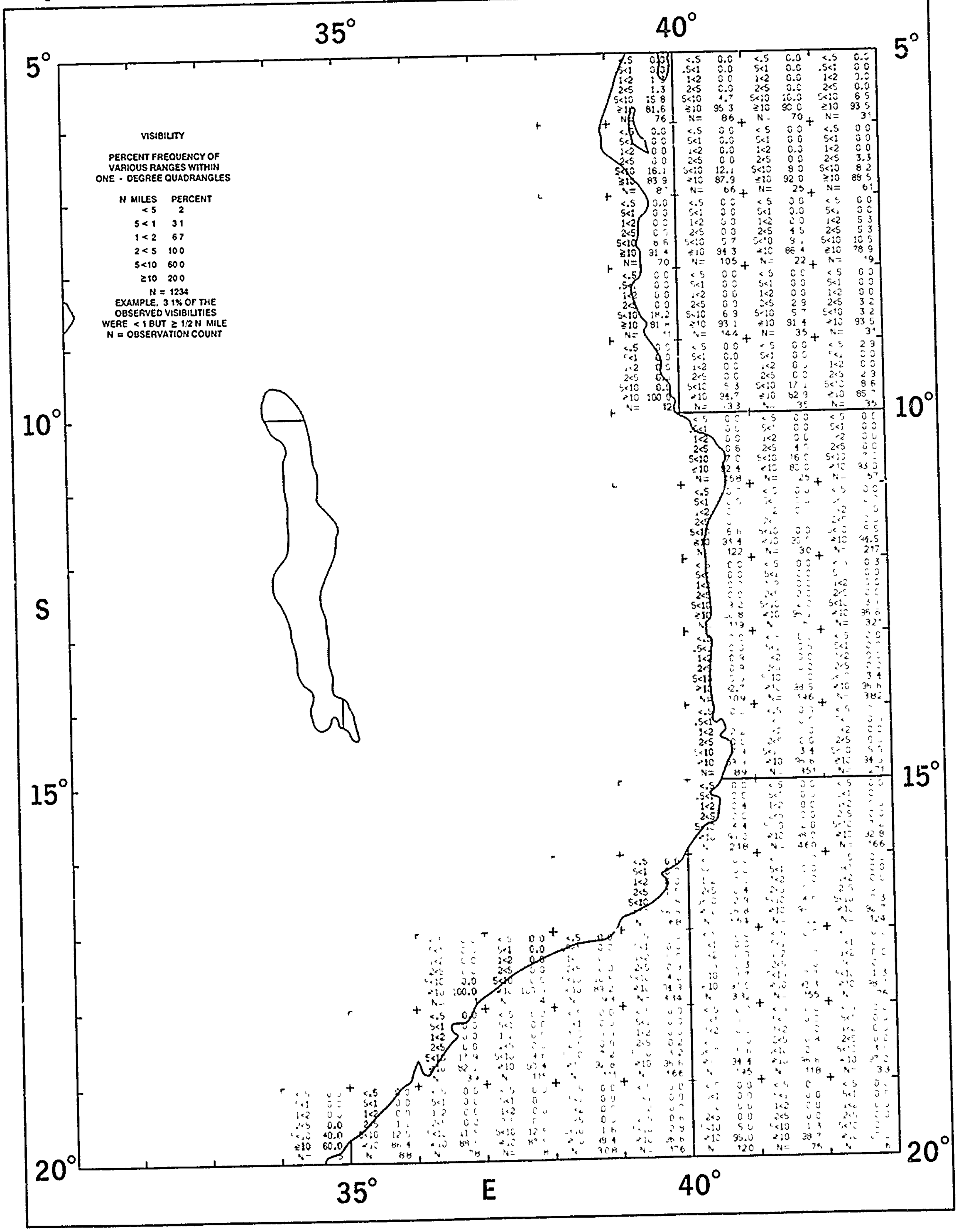
Surface Currents



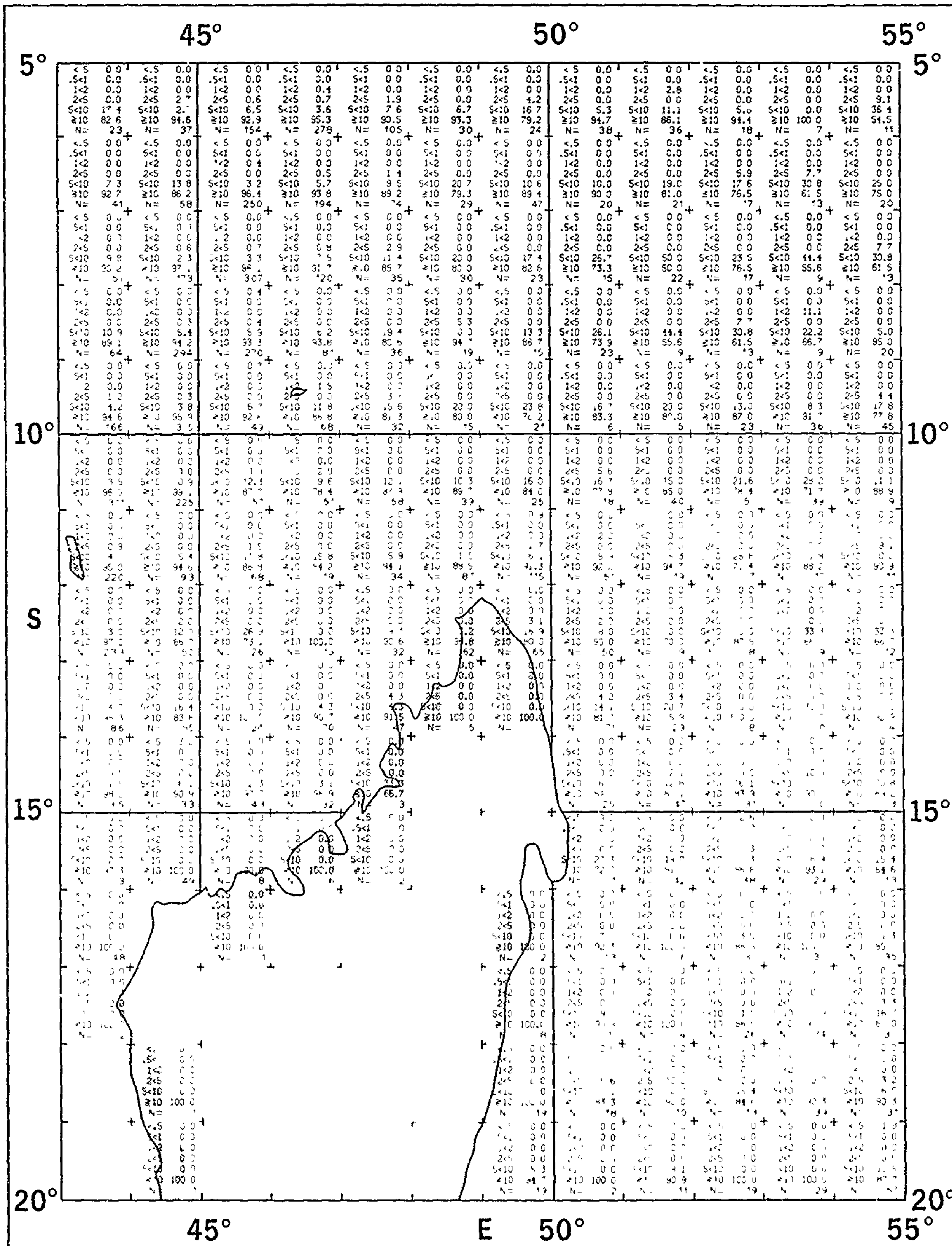

45°
50°
55°
20°
25°
30°
35°
S
E

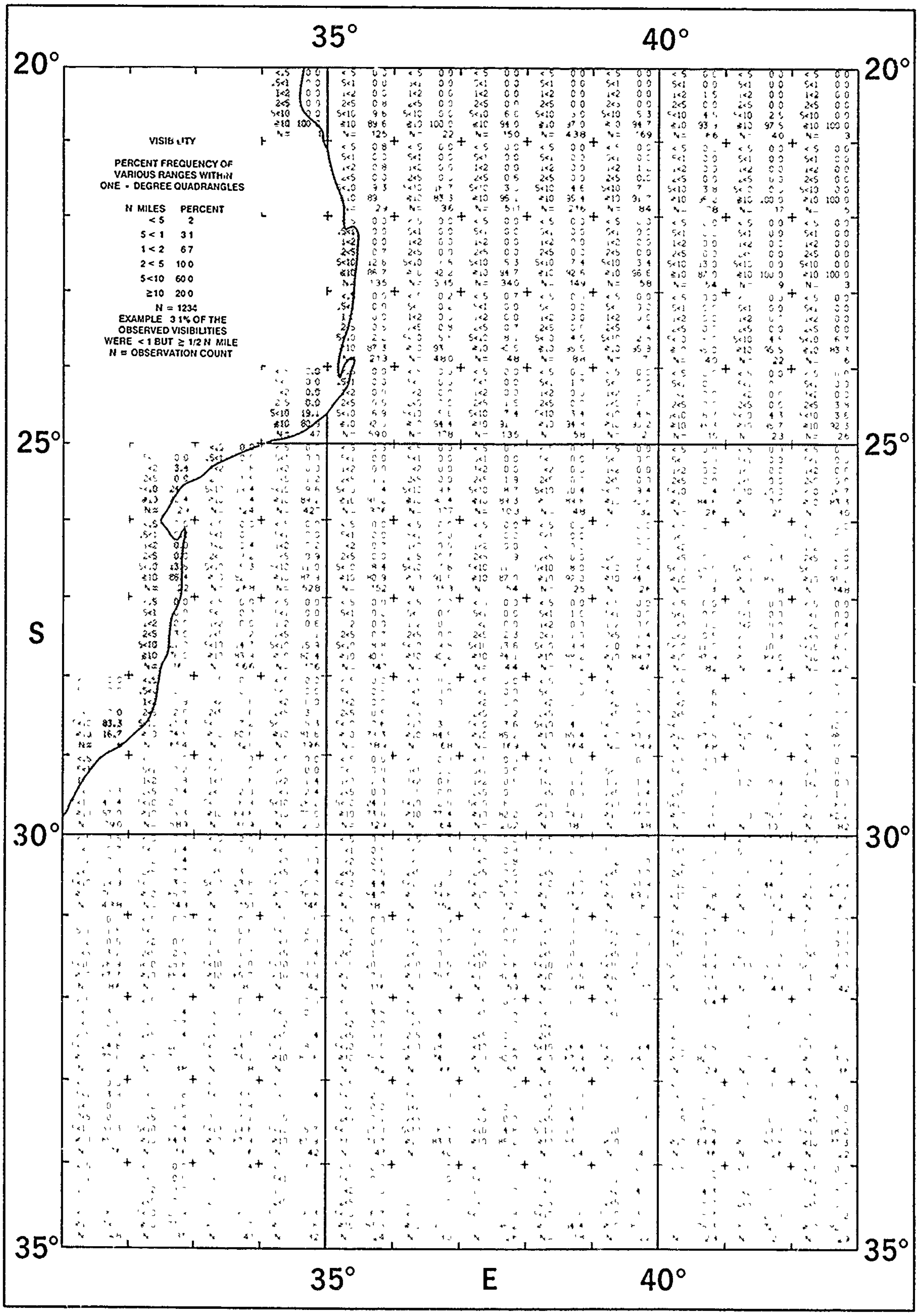

CLOUD COVER
PERCENT FREQUENCY OF.
SOLID LINE - TOTAL CLOUD AMOUNT ≤ 2/8
DASHED LINE - LOW CLOUD AMOUNT ≥ 5/8
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
30
40
50
60
70
30
40
50
60
70
60
50
40
30

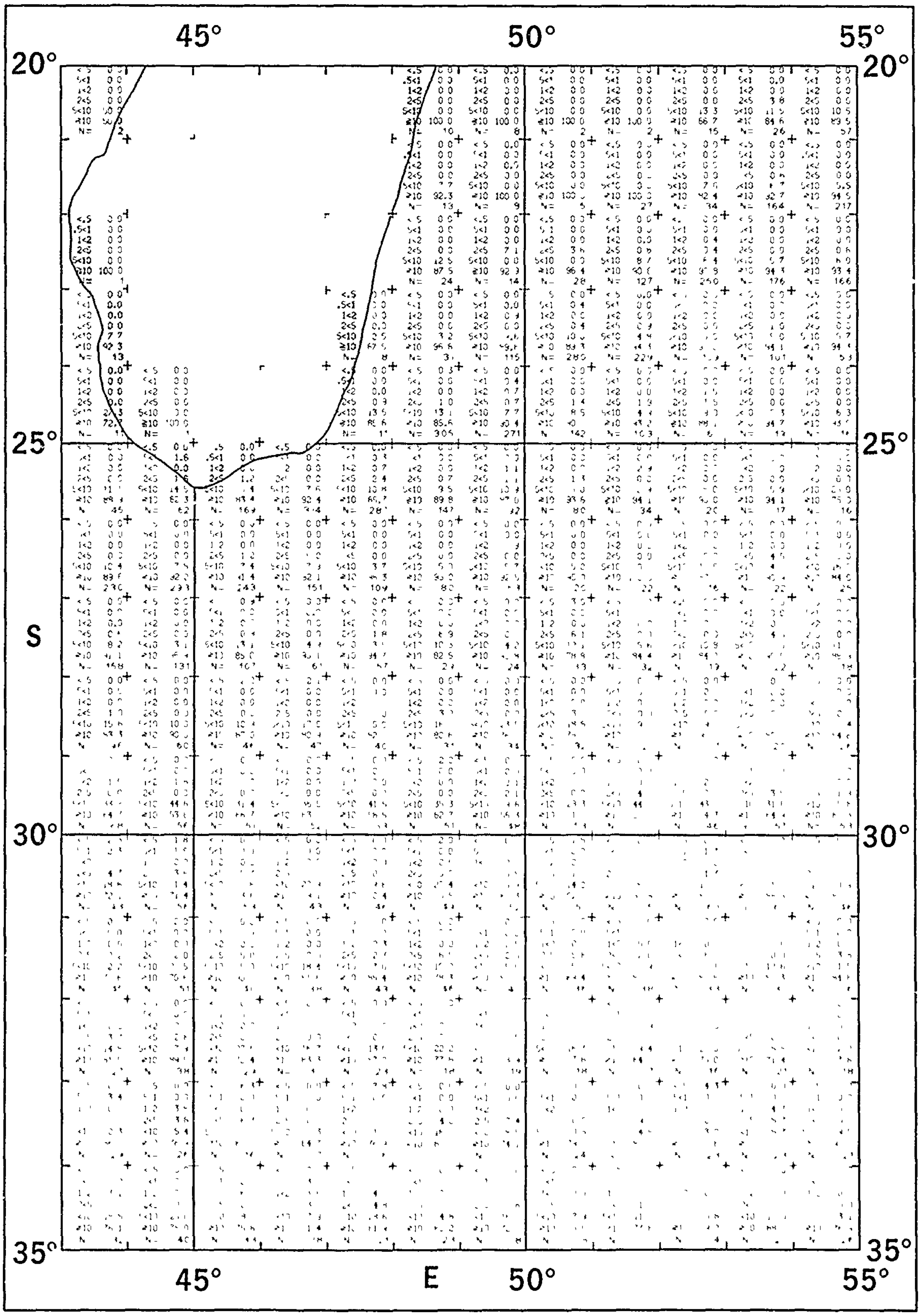

E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
PRECIPITATION
PERCENT FREQUENCY OF OBSERVATIONS REPORTING PRECIPITATION
2.5
5
10
15

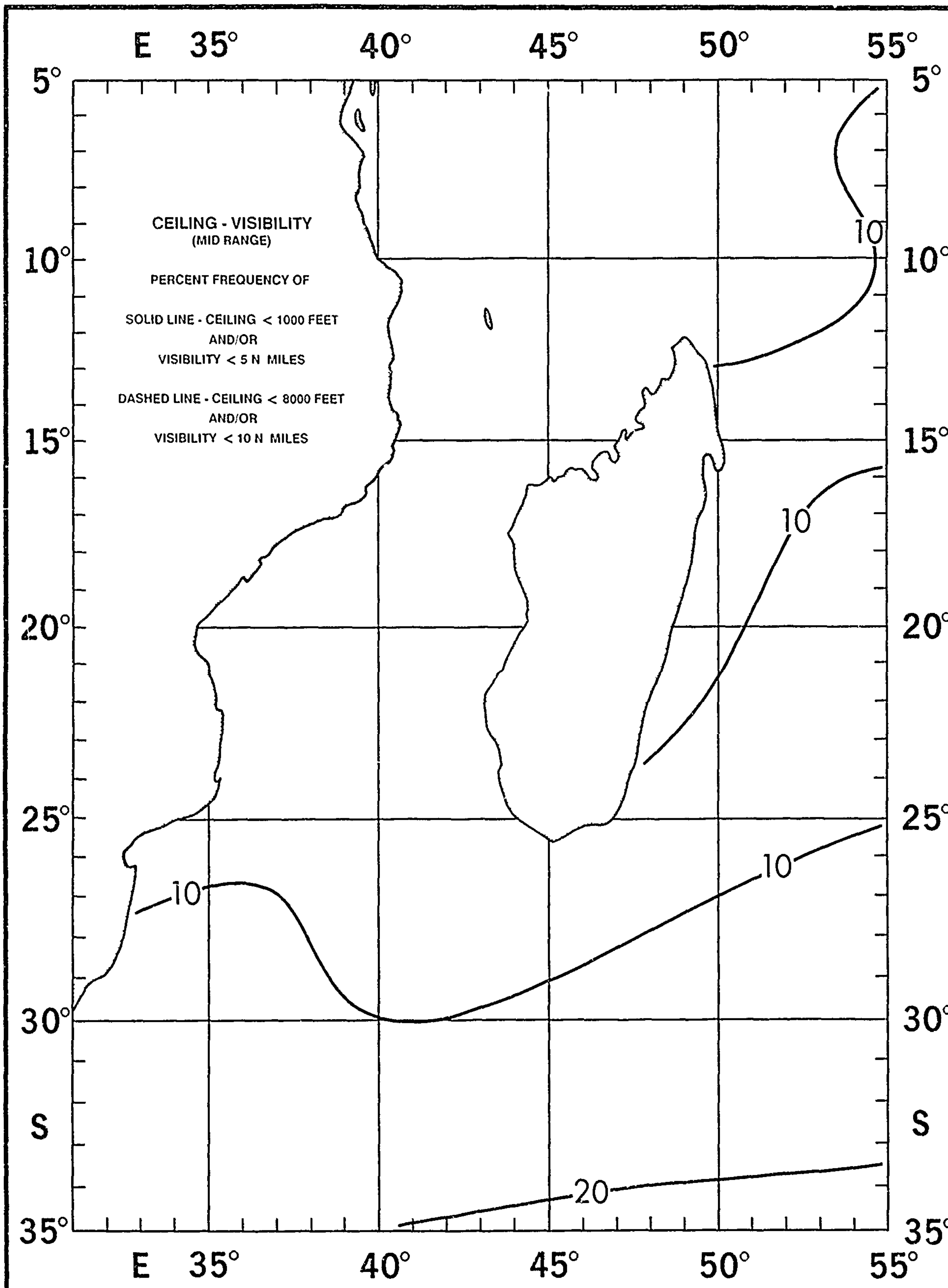

VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
< 5 2
5 < 1 31
1 < 2 67
2 < 5 100
5<10 600
≥10 200
N = 1234
EXAMPLE, 3.1% OF THE OBSERVED VISIBILITIES WERE < 1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT
35°
40°
5°
10°
15°
20°
S
E

September **Visibility**

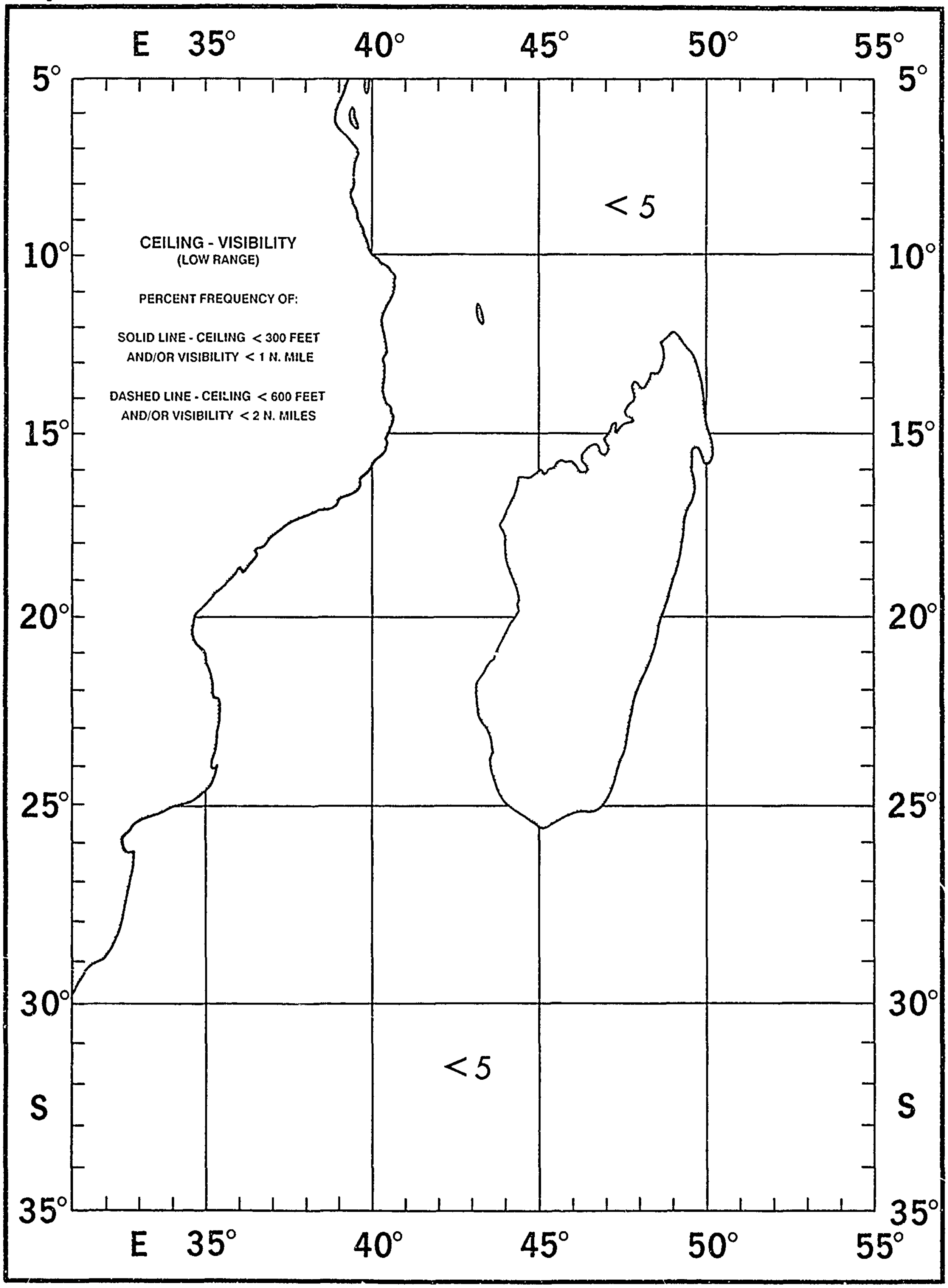


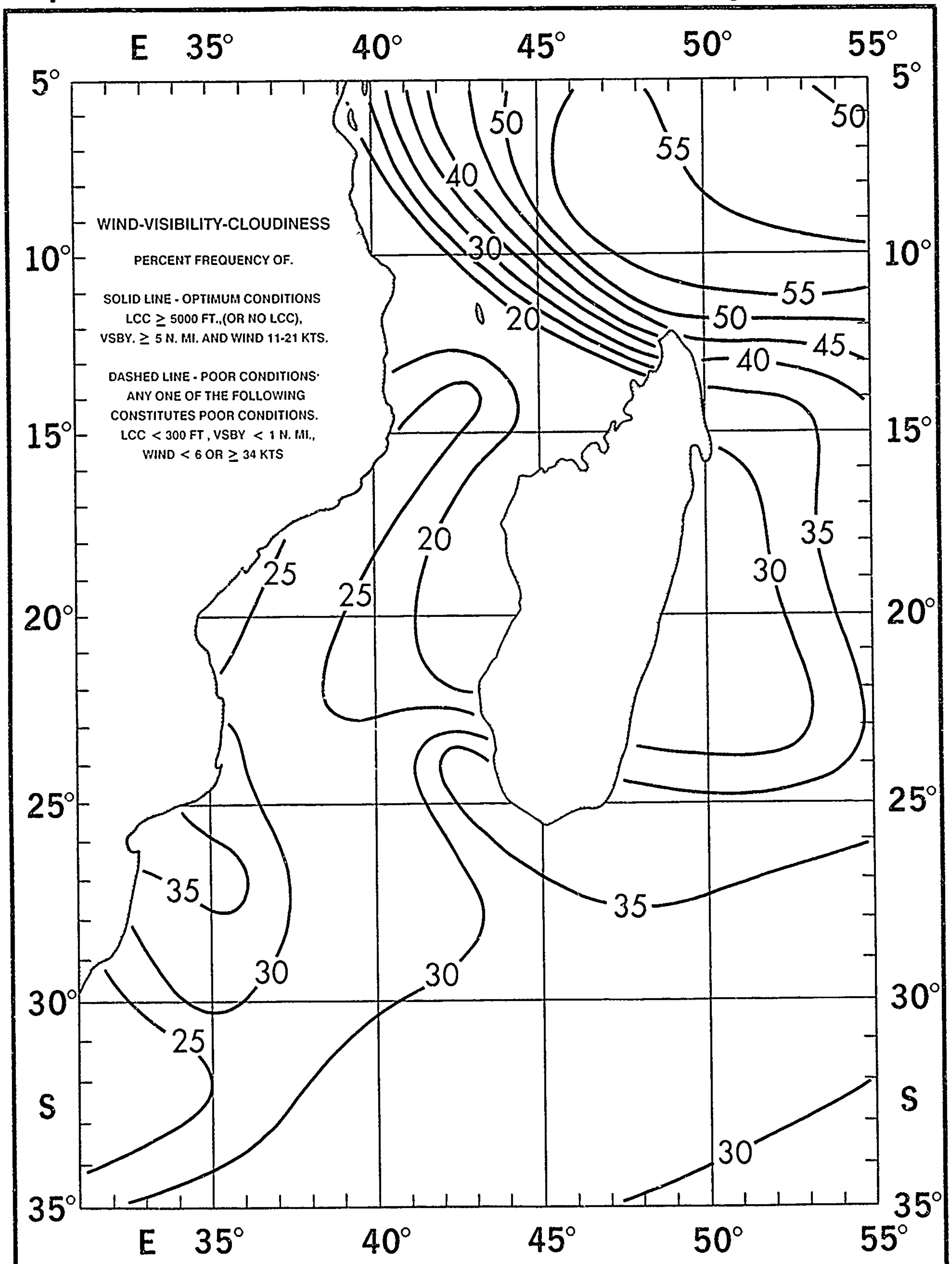

35° 40°
20° 20°
VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
< 5 2
5 < 1 31
1 < 2 67
2 < 5 100
5 < 10 600
≥10 200
N = 1234
EXAMPLE 3.1% OF THE OBSERVED VISIBILITIES WERE < 1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT
25° 25°
S
30° 30°
35° 35°
35° E 40°


45°
50°
55°
20°
25°
30°
35°
S
E


E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
CEILING - VISIBILITY
(MID RANGE)
PERCENT FREQUENCY OF
SOLID LINE - CEILING < 1000 FEET
AND/OR
VISIBILITY < 5 N MILES
DASHED LINE - CEILING < 8000 FEET
AND/OR
VISIBILITY < 10 N MILES
10
10
10
10
20

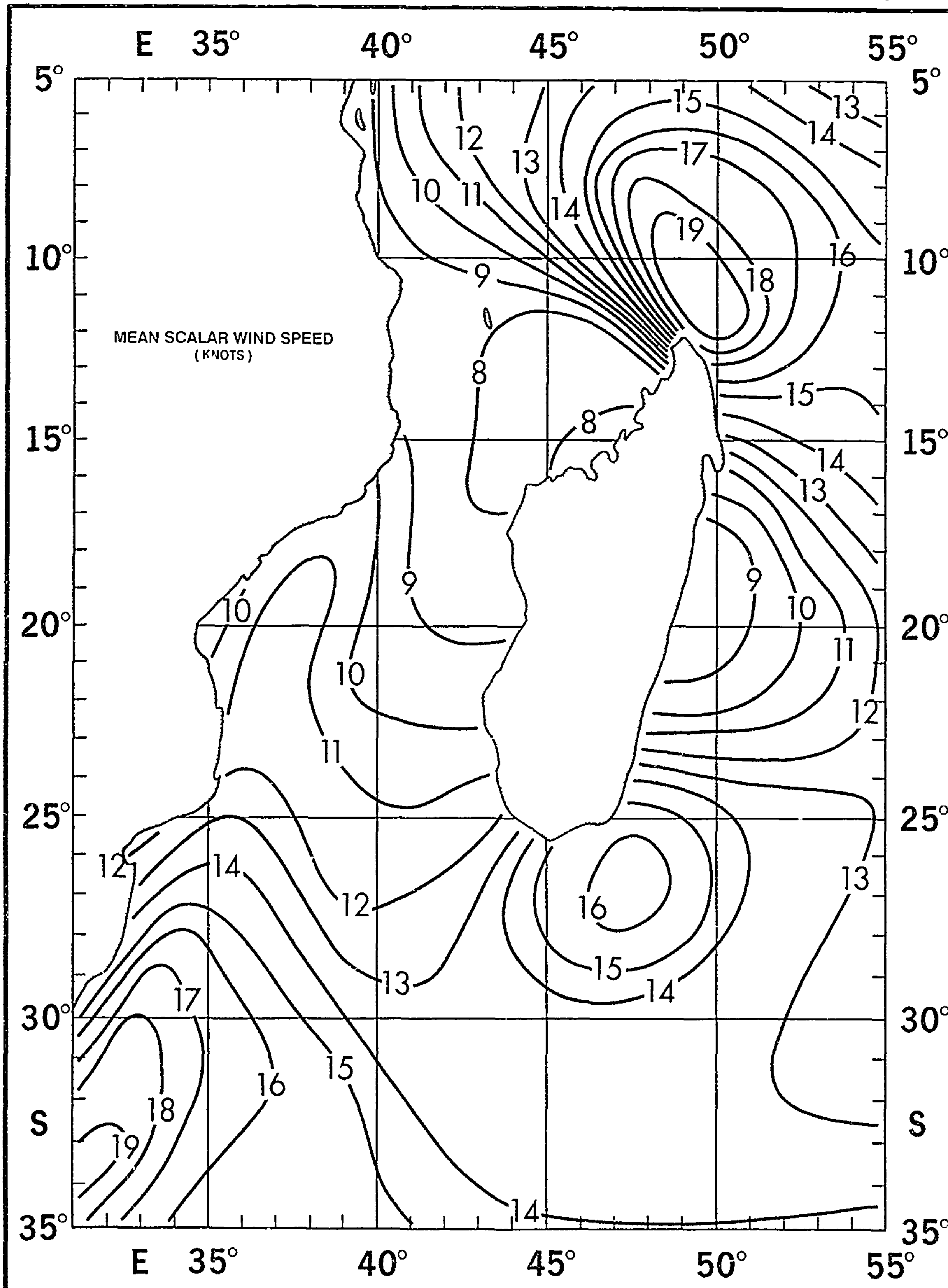
September — Ceiling - Visibility (Low Range)



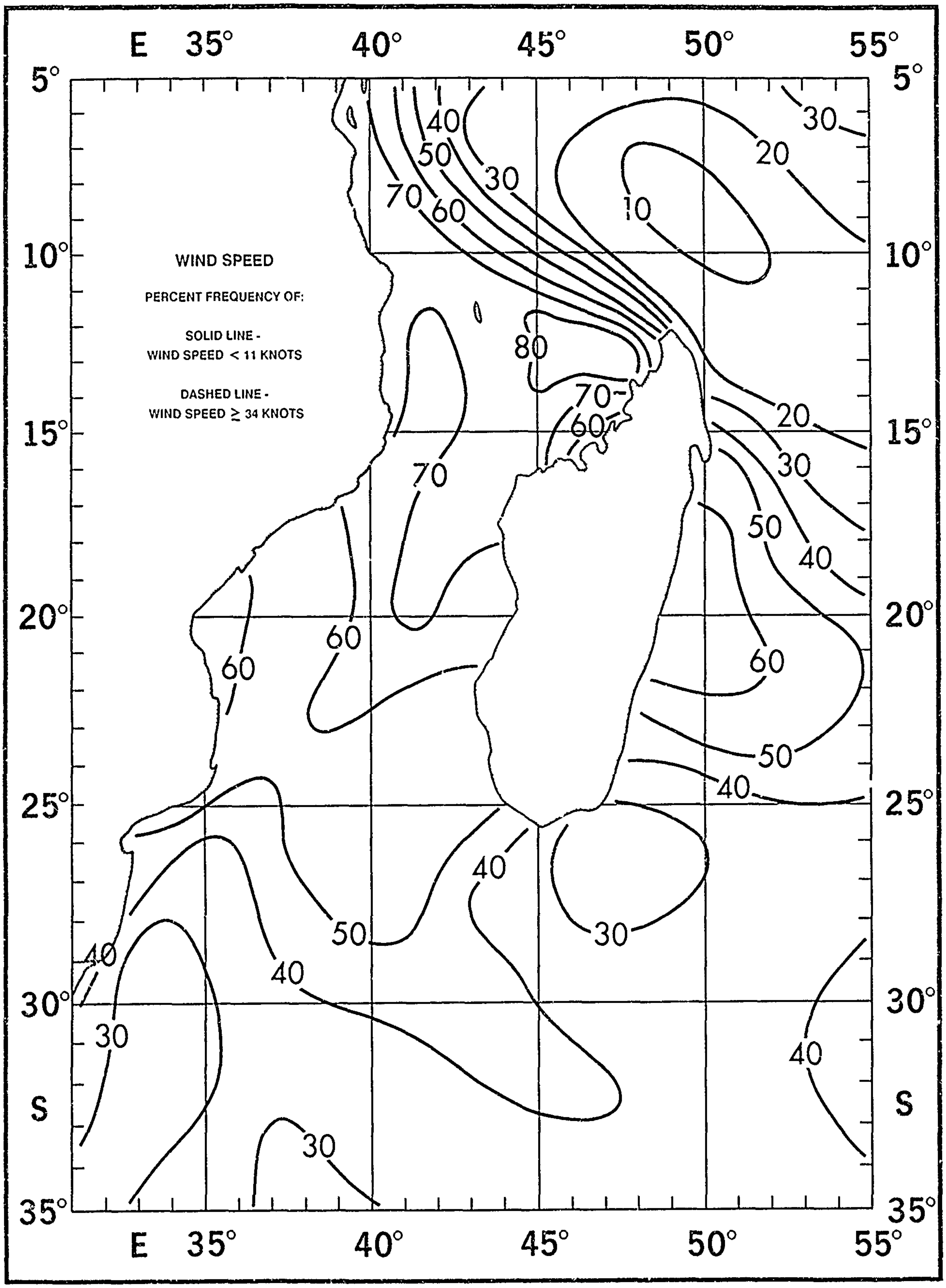


E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
WIND-VISIBILITY-CLOUDINESS
PERCENT FREQUENCY OF.
SOLID LINE - OPTIMUM CONDITIONS
LCC ≥ 5000 FT.,(OR NO LCC),
VSBY. ≥ 5 N. MI. AND WIND 11-21 KTS.
DASHED LINE - POOR CONDITIONS·
ANY ONE OF THE FOLLOWING
CONSTITUTES POOR CONDITIONS.
LCC < 300 FT , VSBY < 1 N. MI.,
WIND < 6 OR ≥ 34 KTS
50
55
50
40
30
20
55
50
45
40
35
30
20
25
25
35
35
30
30
25
30

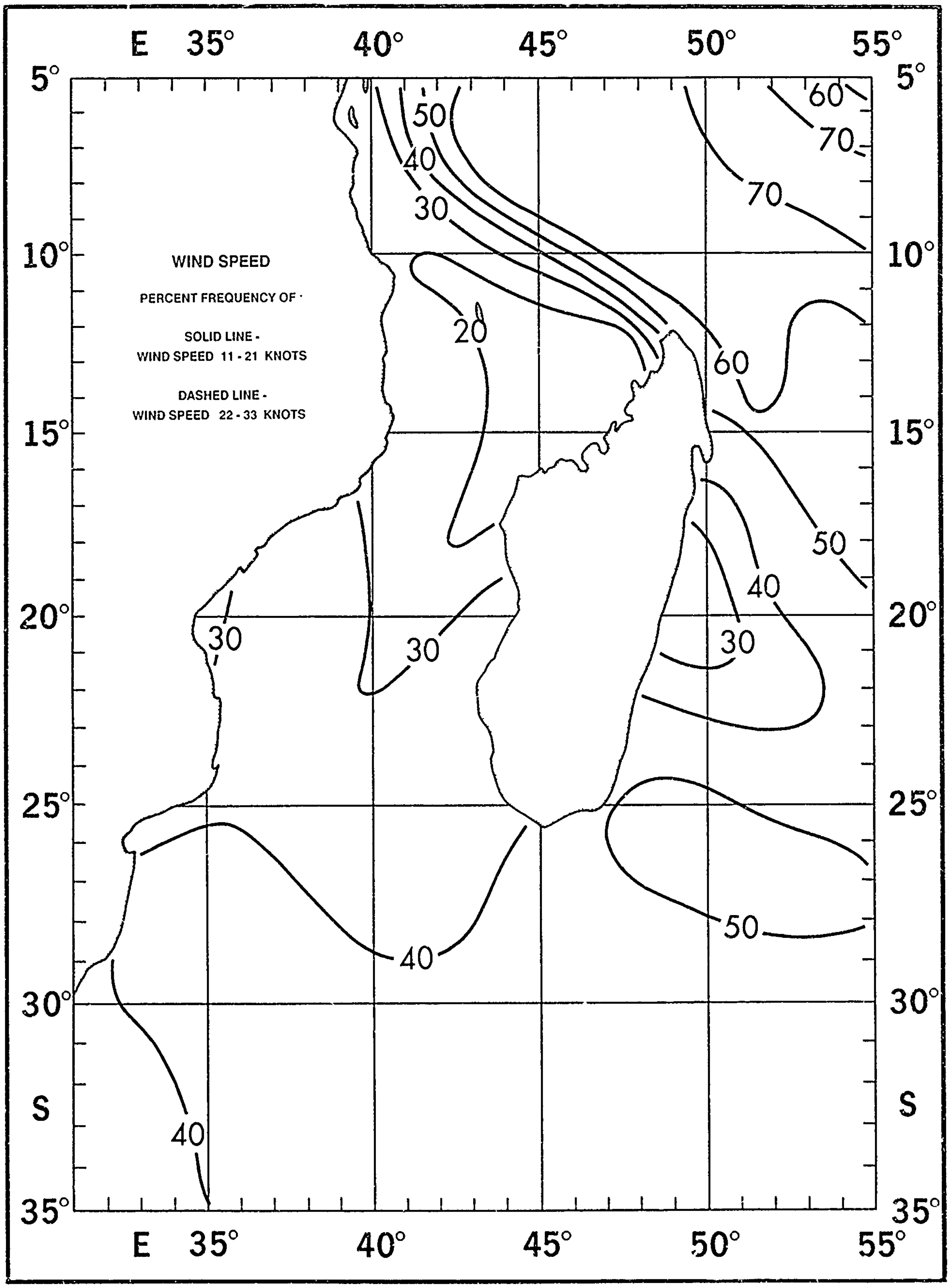
Mean Scalar Wind Speed

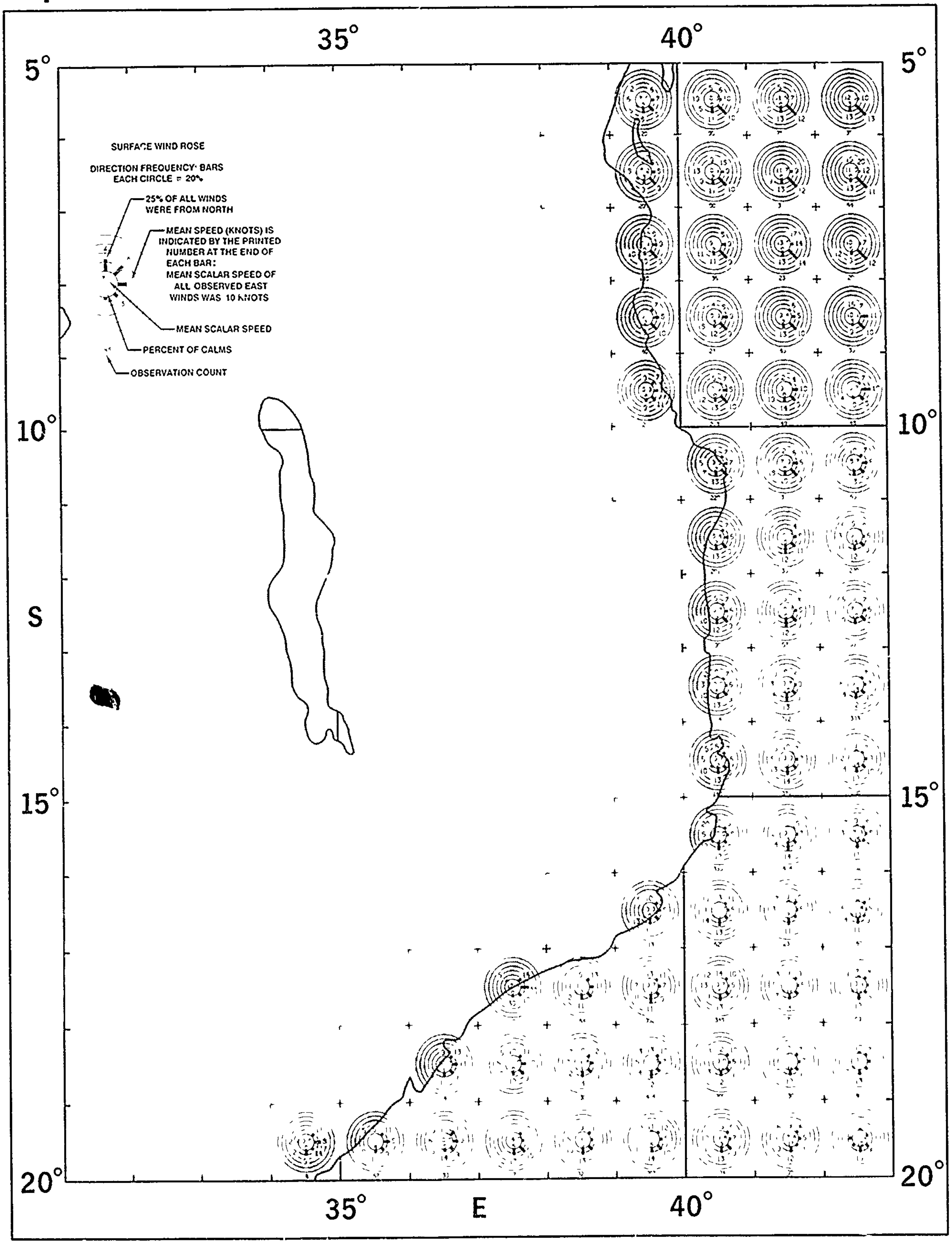


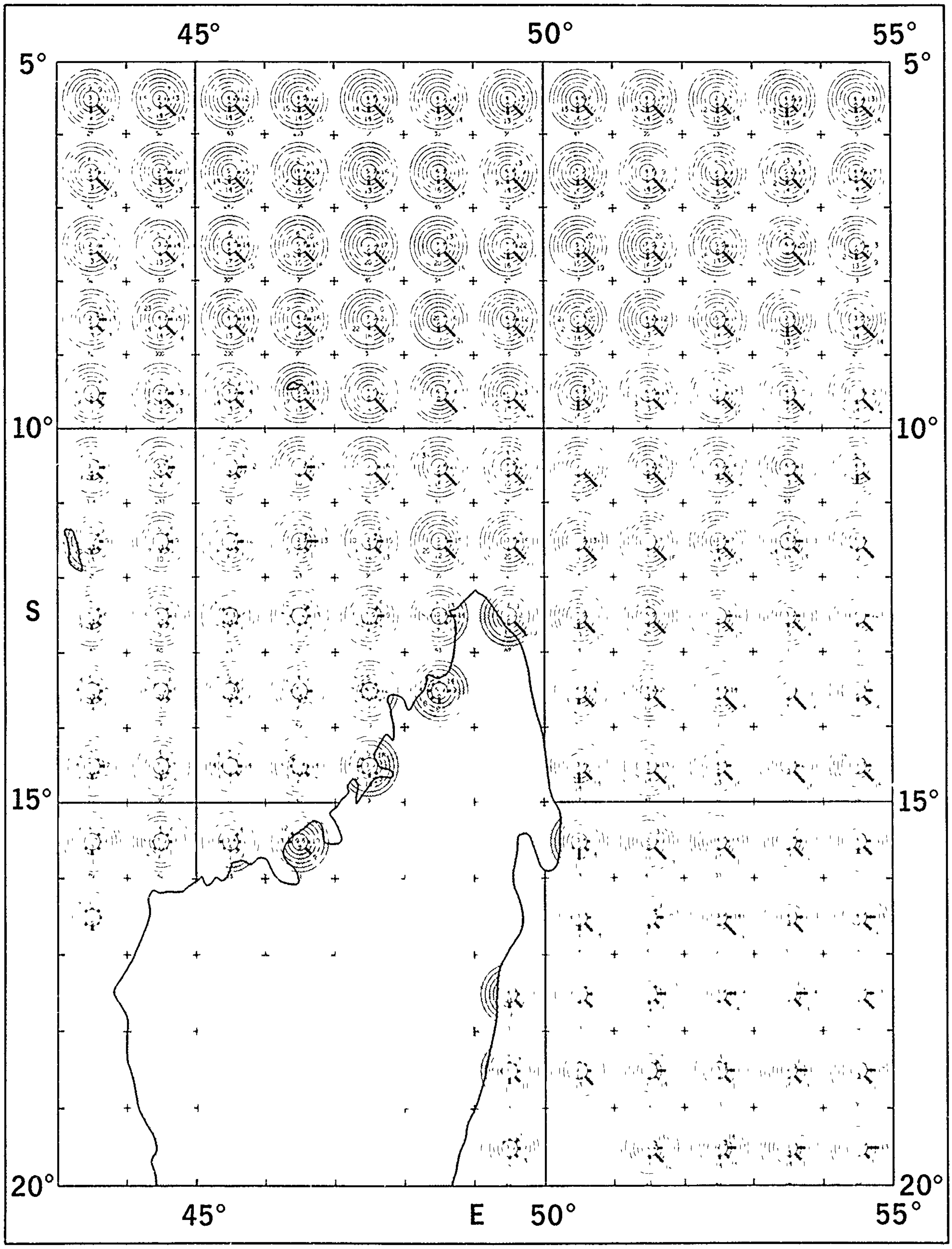
September — Wind Speed <11 and ≥34 Knots

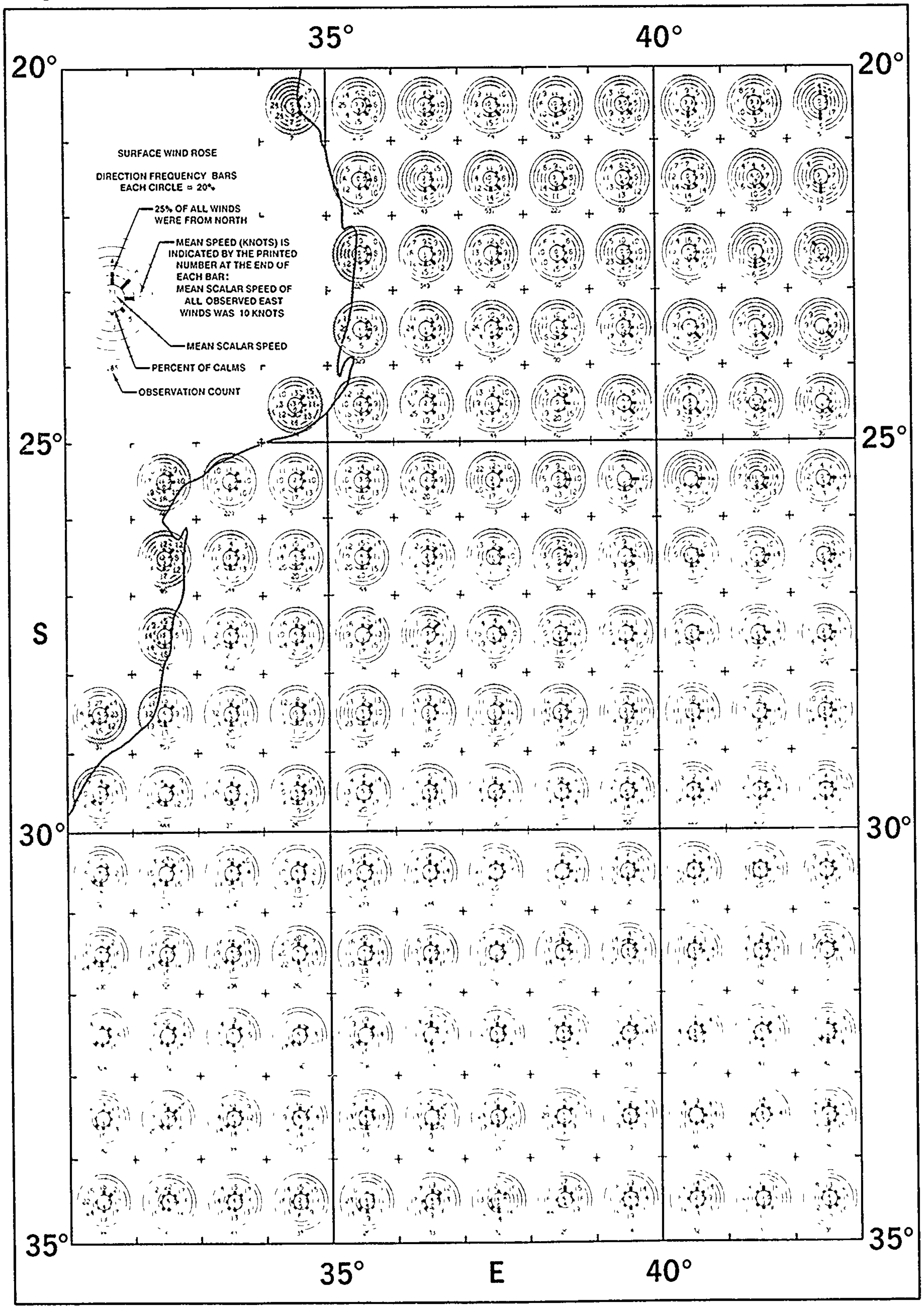


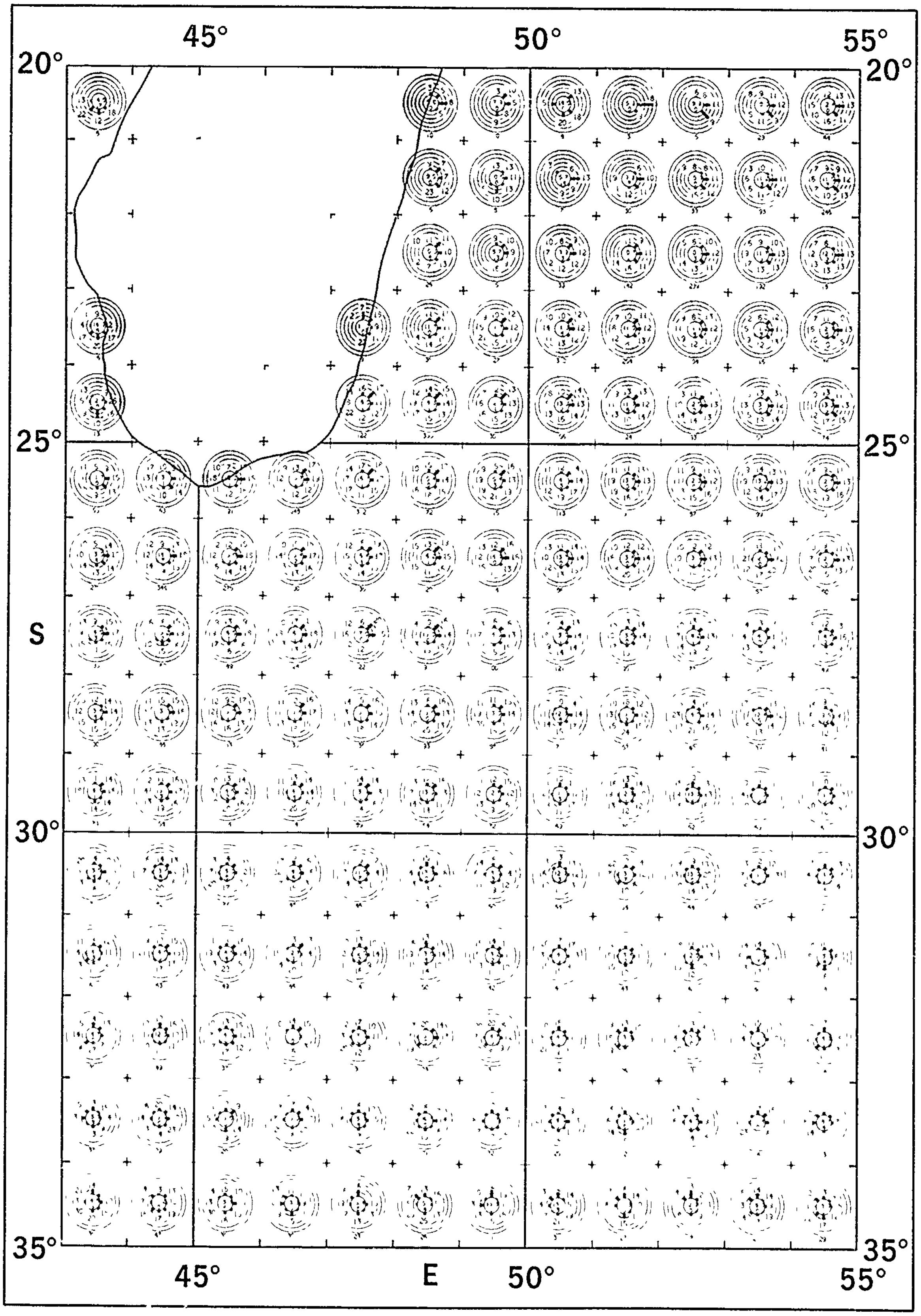
September Wind Speed 11 - 21 and 22 - 33 Knots

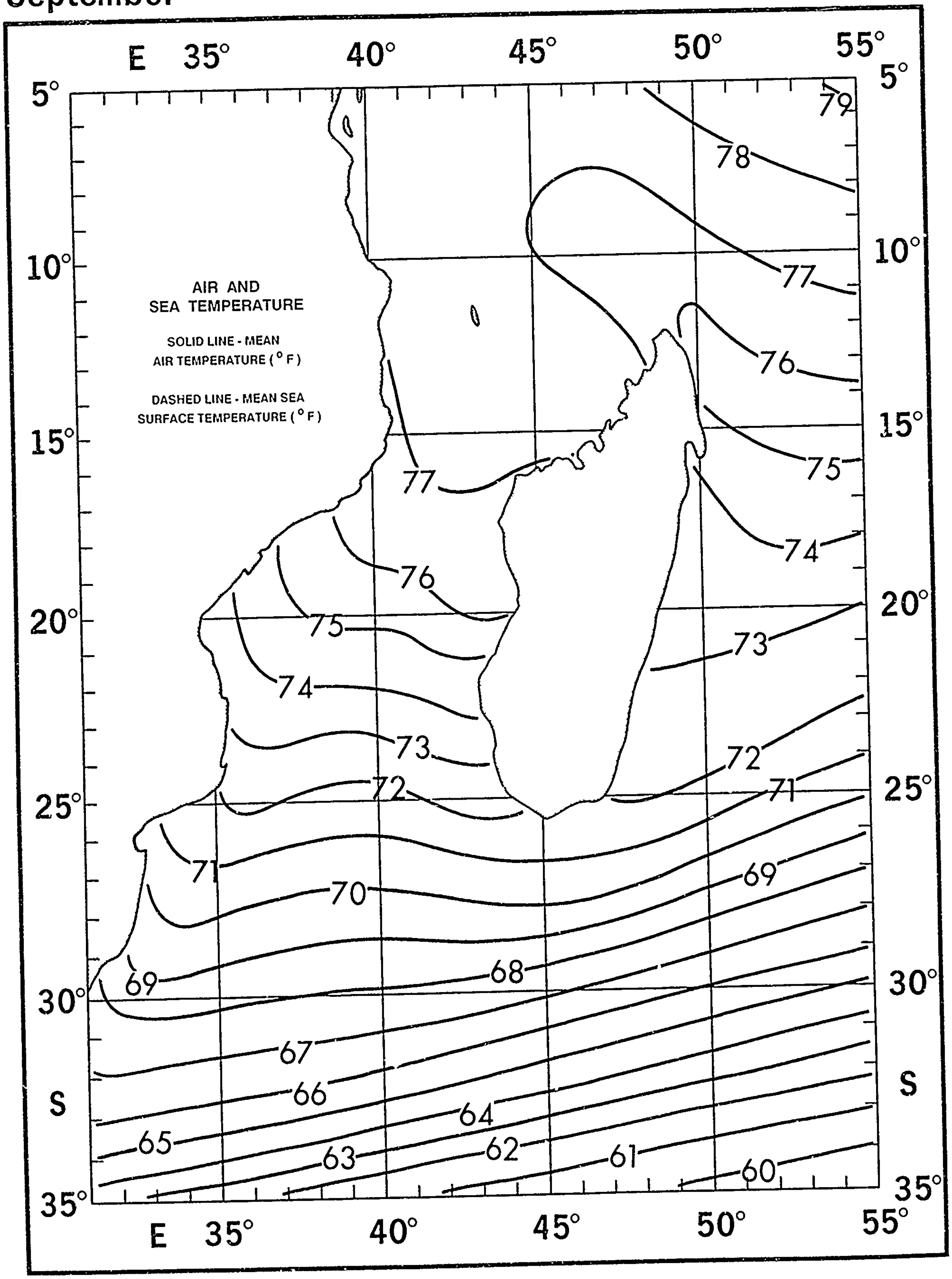



SURFACE WIND ROSE
DIRECTION FREQUENCY BARS
EACH CIRCLE = 20%
25% OF ALL WINDS WERE FROM NORTH
MEAN SPEED (KNOTS) IS INDICATED BY THE PRINTED NUMBER AT THE END OF EACH BAR:
MEAN SCALAR SPEED OF ALL OBSERVED EAST WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT
35°
40°
5°
10°
S
15°
20°
E

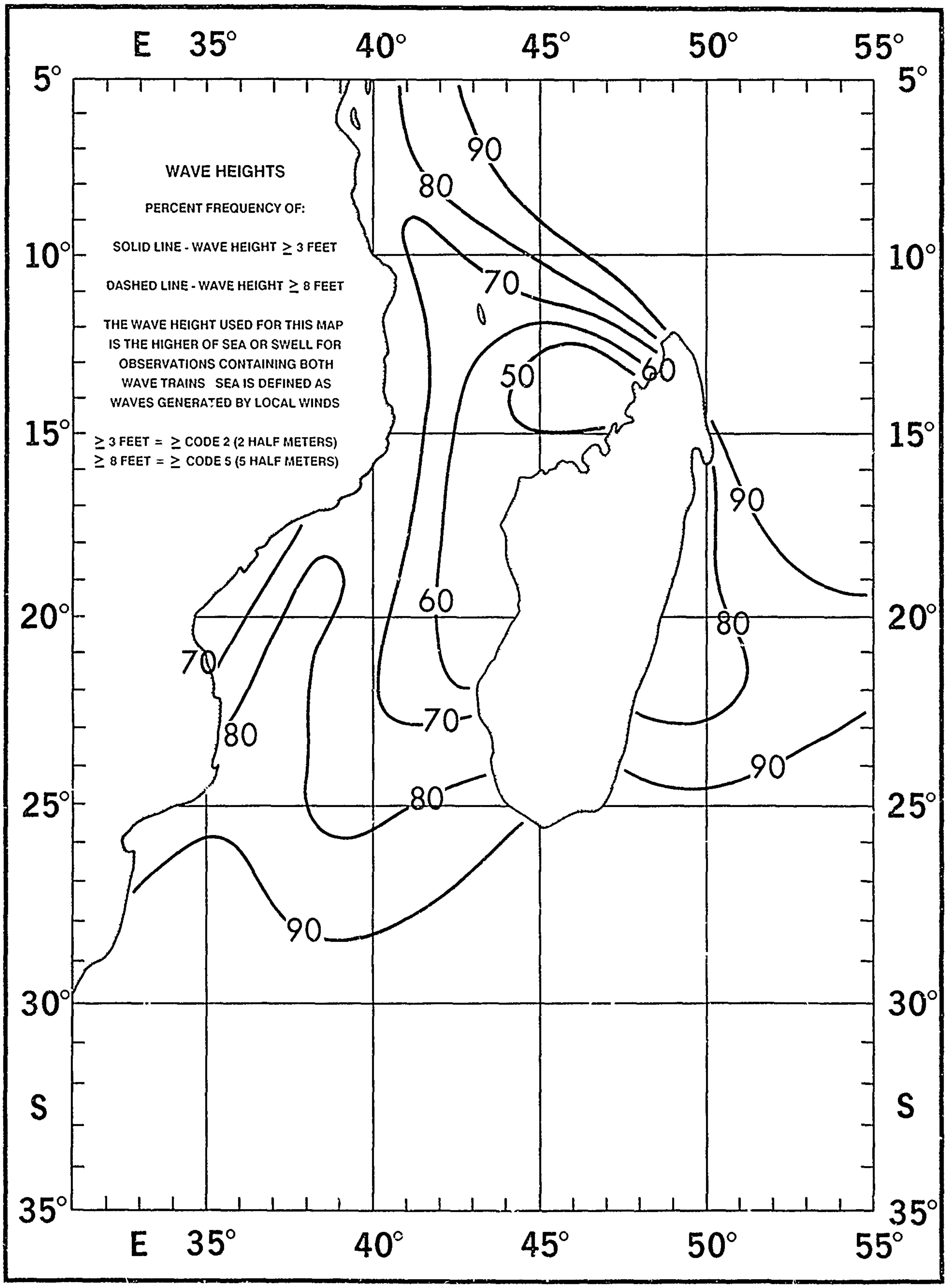

45°
50°
55°
5°
10°
15°
20°
S
E

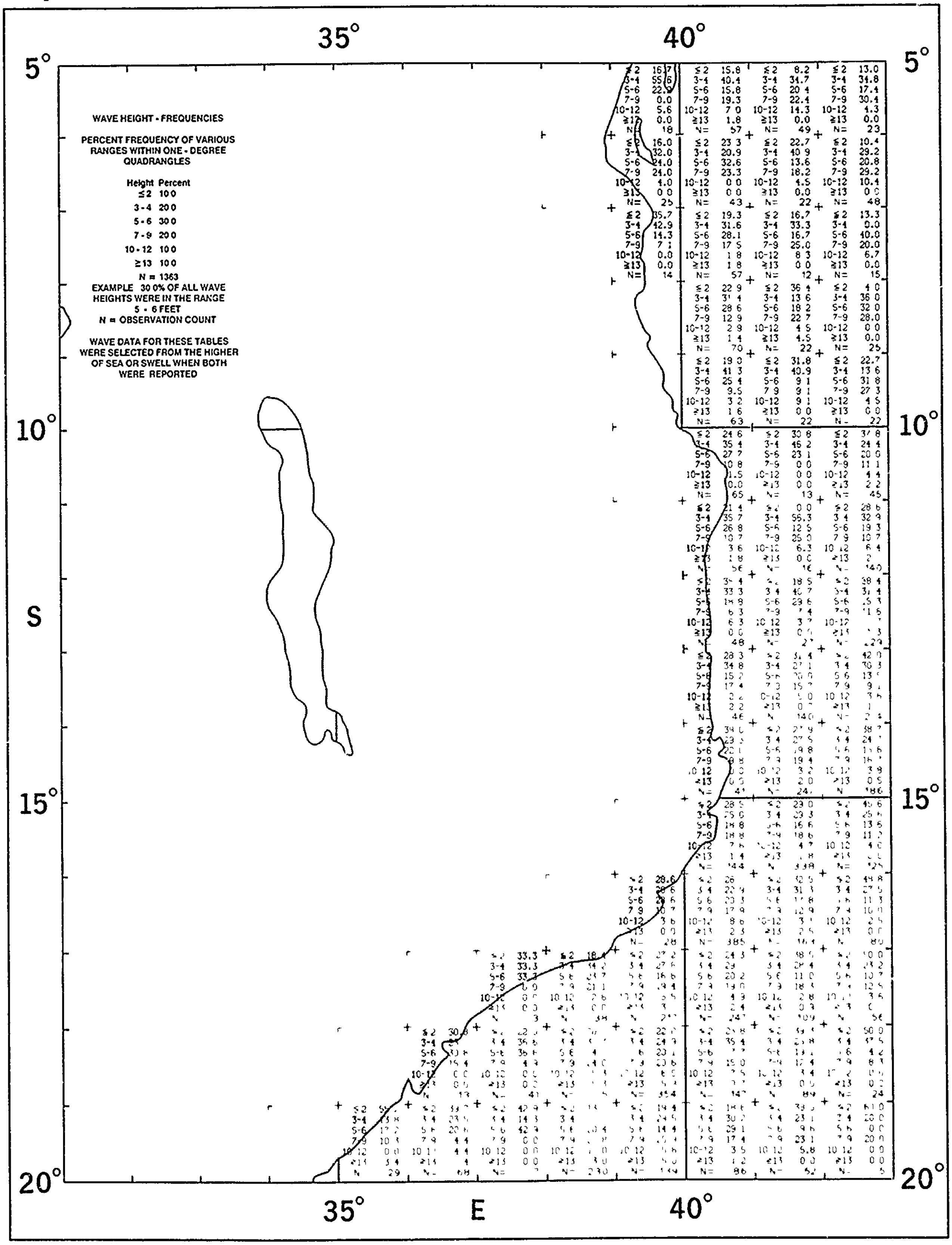

35°
40°
20°
20°
SURFACE WIND ROSE
DIRECTION FREQUENCY BARS
EACH CIRCLE = 20%
25% OF ALL WINDS
WERE FROM NORTH
MEAN SPEED (KNOTS) IS
INDICATED BY THE PRINTED
NUMBER AT THE END OF
EACH BAR:
MEAN SCALAR SPEED OF
ALL OBSERVED EAST
WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT
25°
25°
S
30°
30°
35°
35°
35°
E
40°


45°
50°
55°
20°
25°
30°
35°
S
E

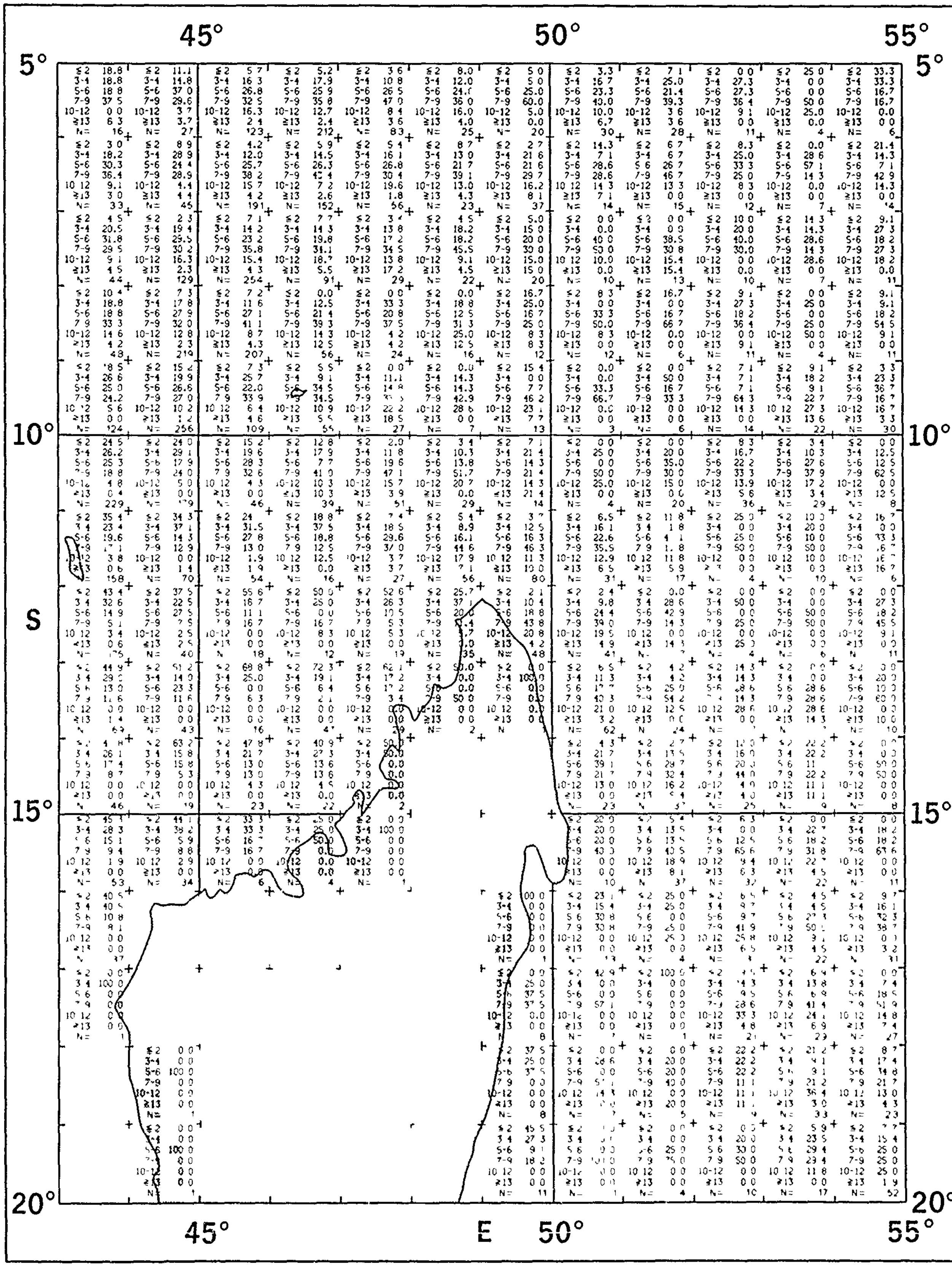

AIR AND
SEA TEMPERATURE
SOLID LINE - MEAN
AIR TEMPERATURE (° F)
DASHED LINE - MEAN SEA
SURFACE TEMPERATURE (° F)
E 35°
40°
45°
50°
55°
5°
10°
15°
20°
25°
30°
35°
S
79
78
77
76
75
74
73
72
71
70
69
68
67
66
65
64
63
62
61
60

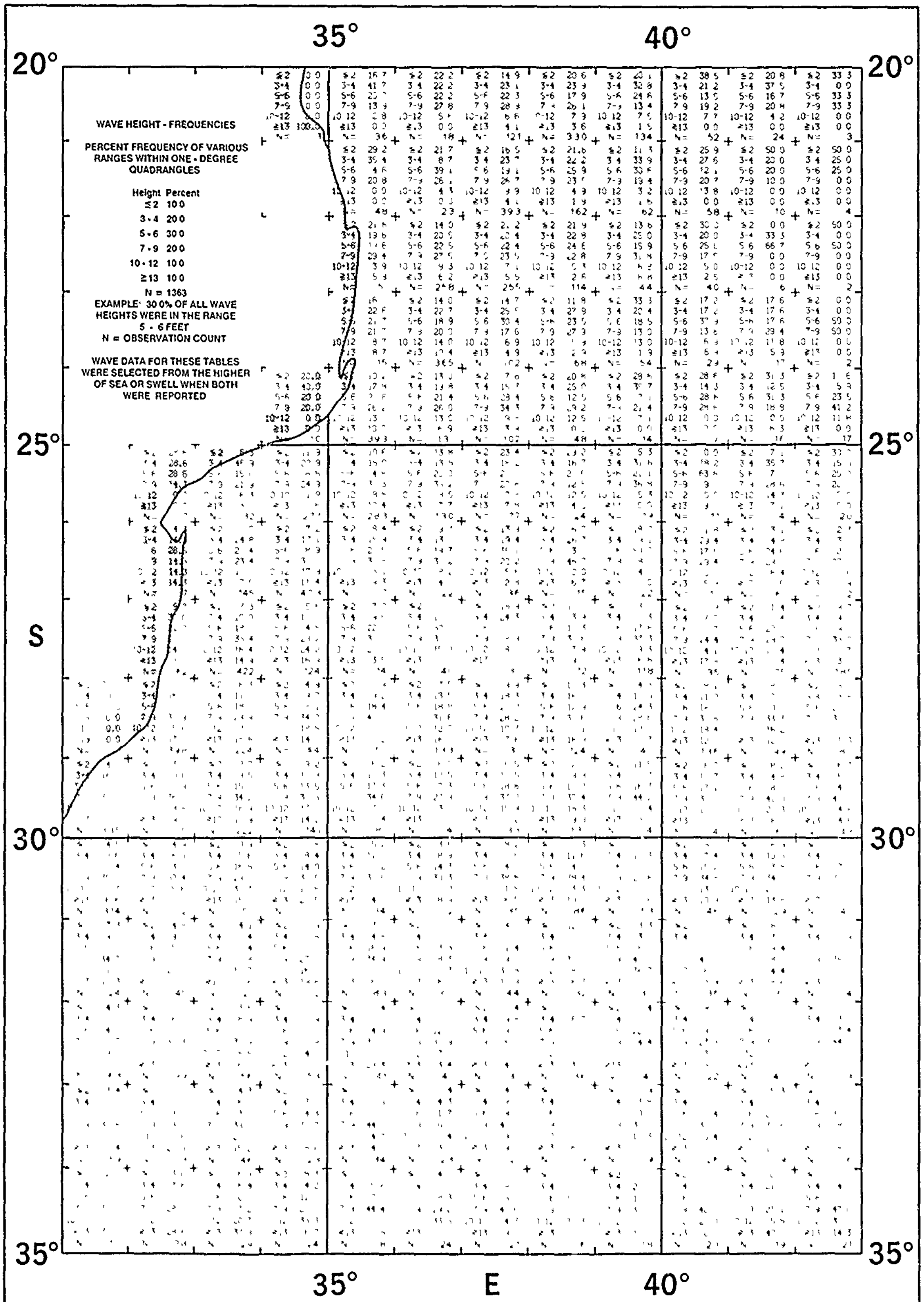
September Wave Height

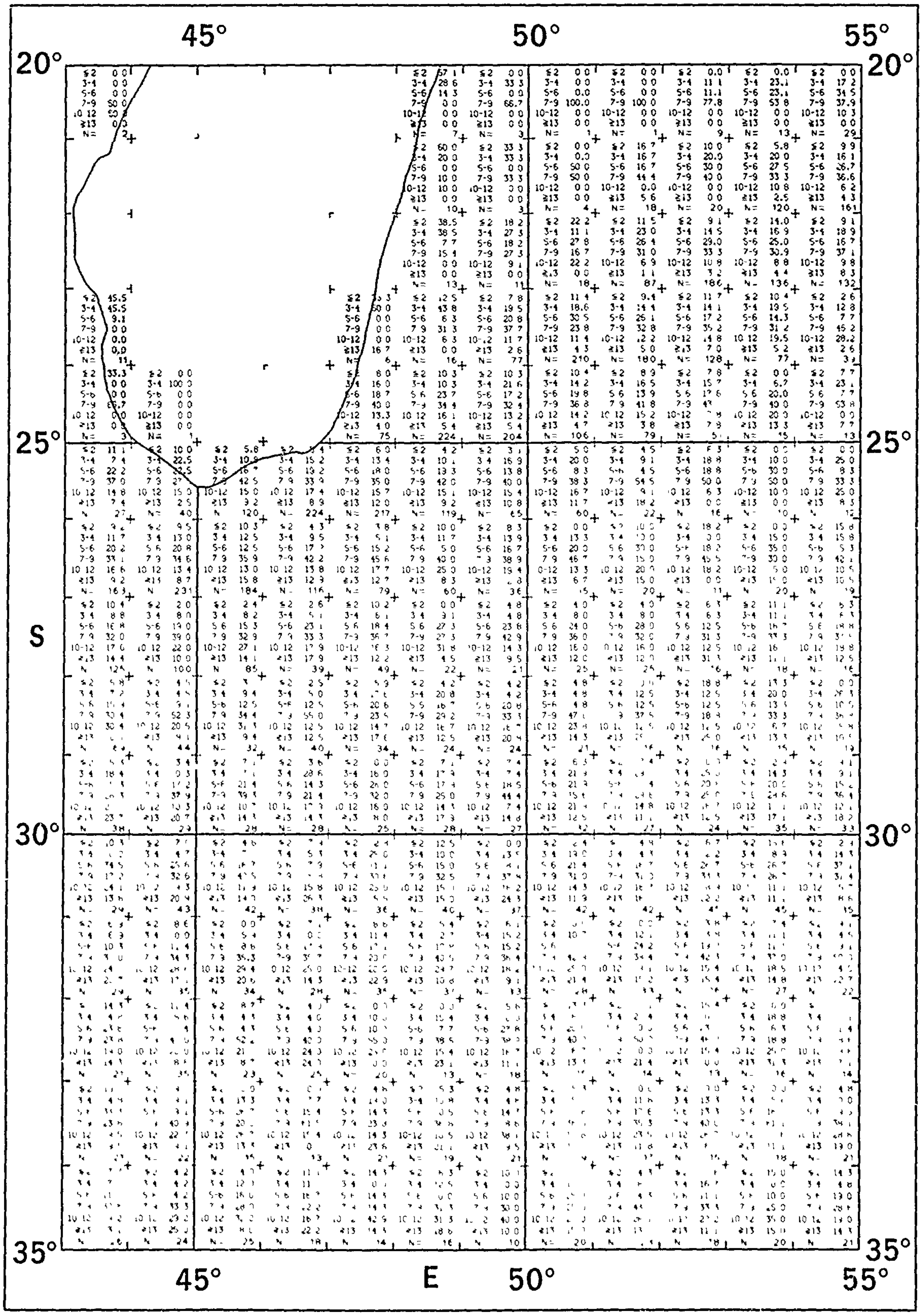


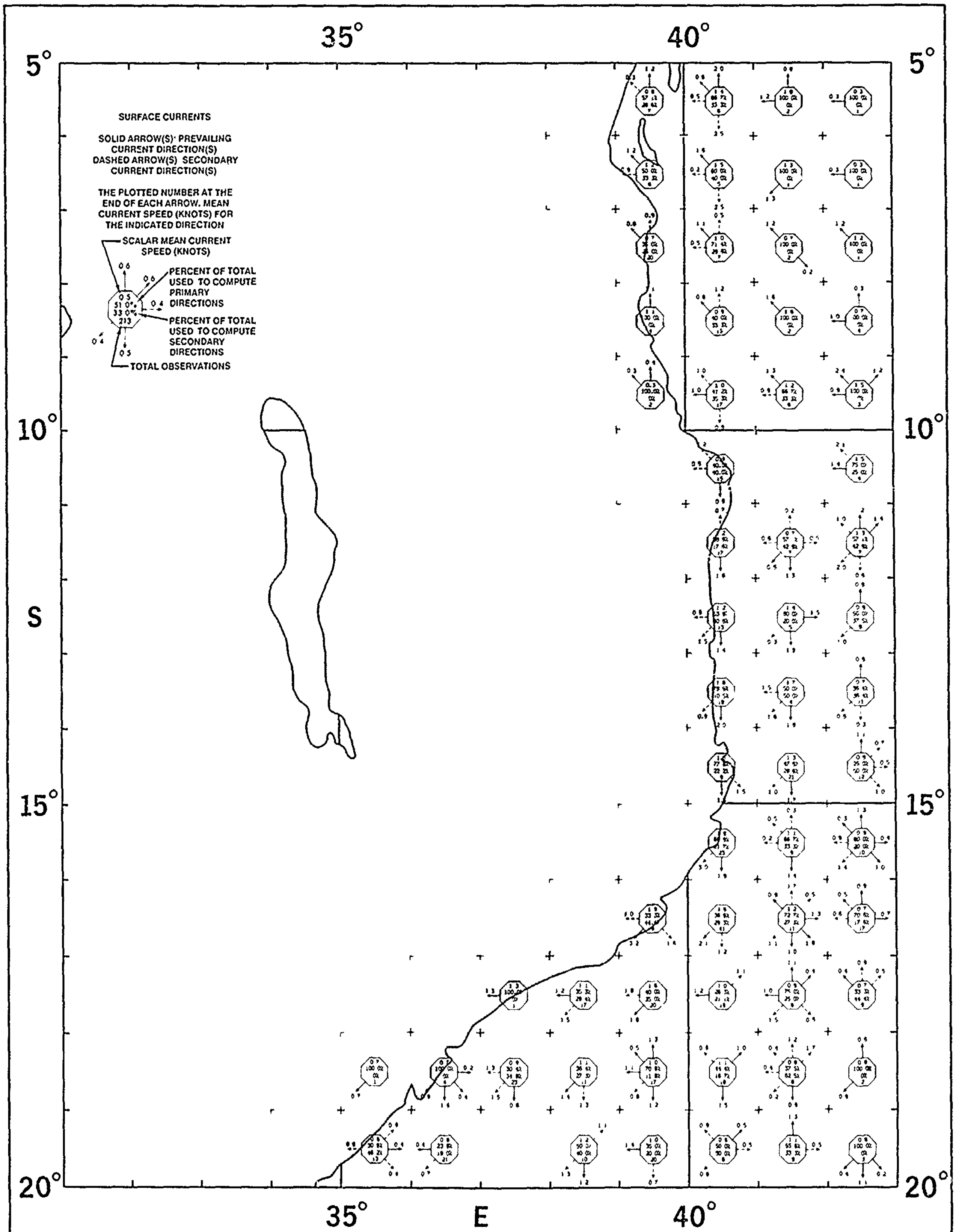

35°
40°
5°
10°
15°
20°
S
E
WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
Height Percent
≤2 10.0
3-4 20.0
5-6 30.0
7-9 20.0
10-12 10.0
≥13 10.0
N = 1363
EXAMPLE 30.0% OF ALL WAVE HEIGHTS WERE IN THE RANGE 5 - 6 FEET
N = OBSERVATION COUNT
WAVE DATA FOR THESE TABLES WERE SELECTED FROM THE HIGHER OF SEA OR SWELL WHEN BOTH WERE REPORTED

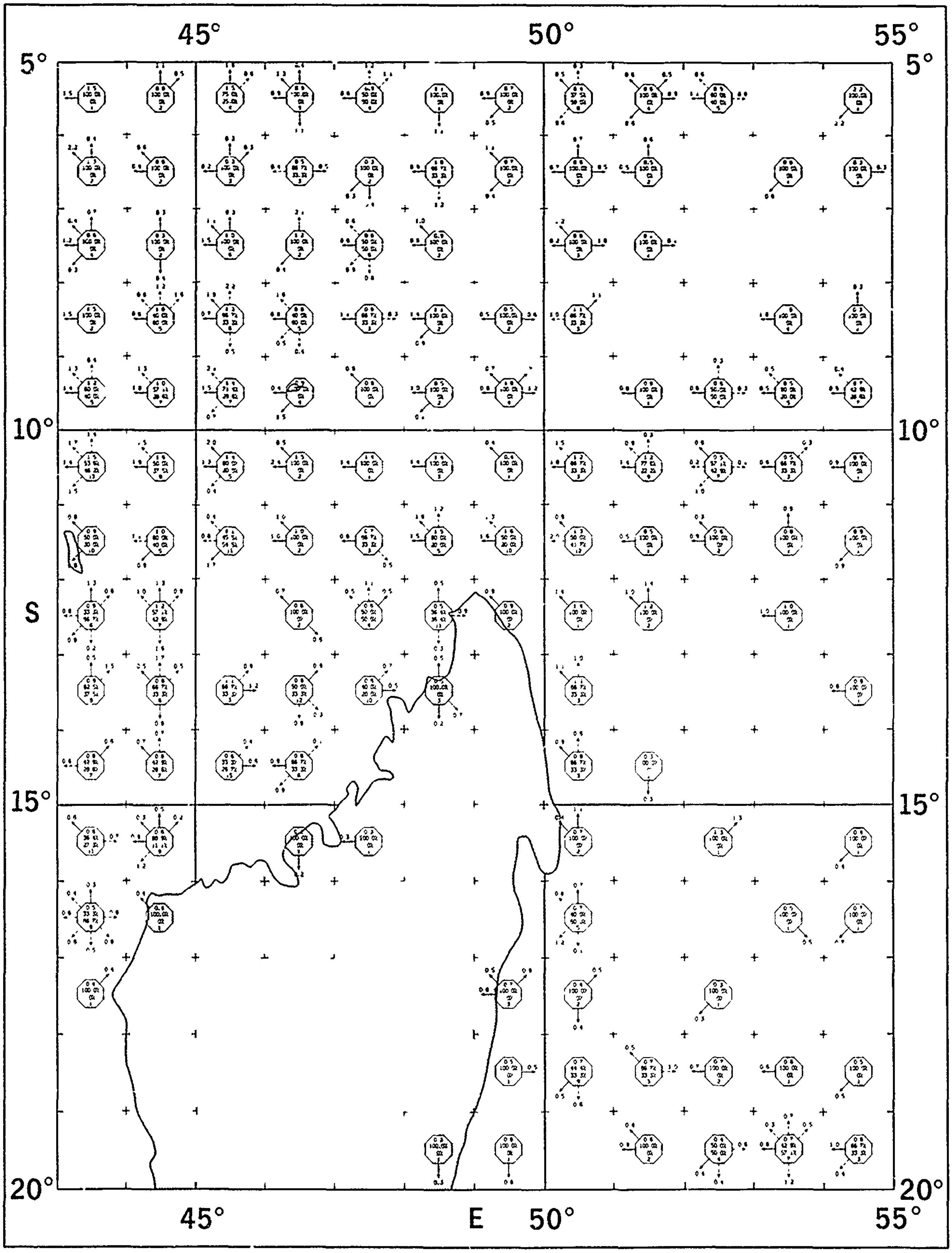
September — Wave Height

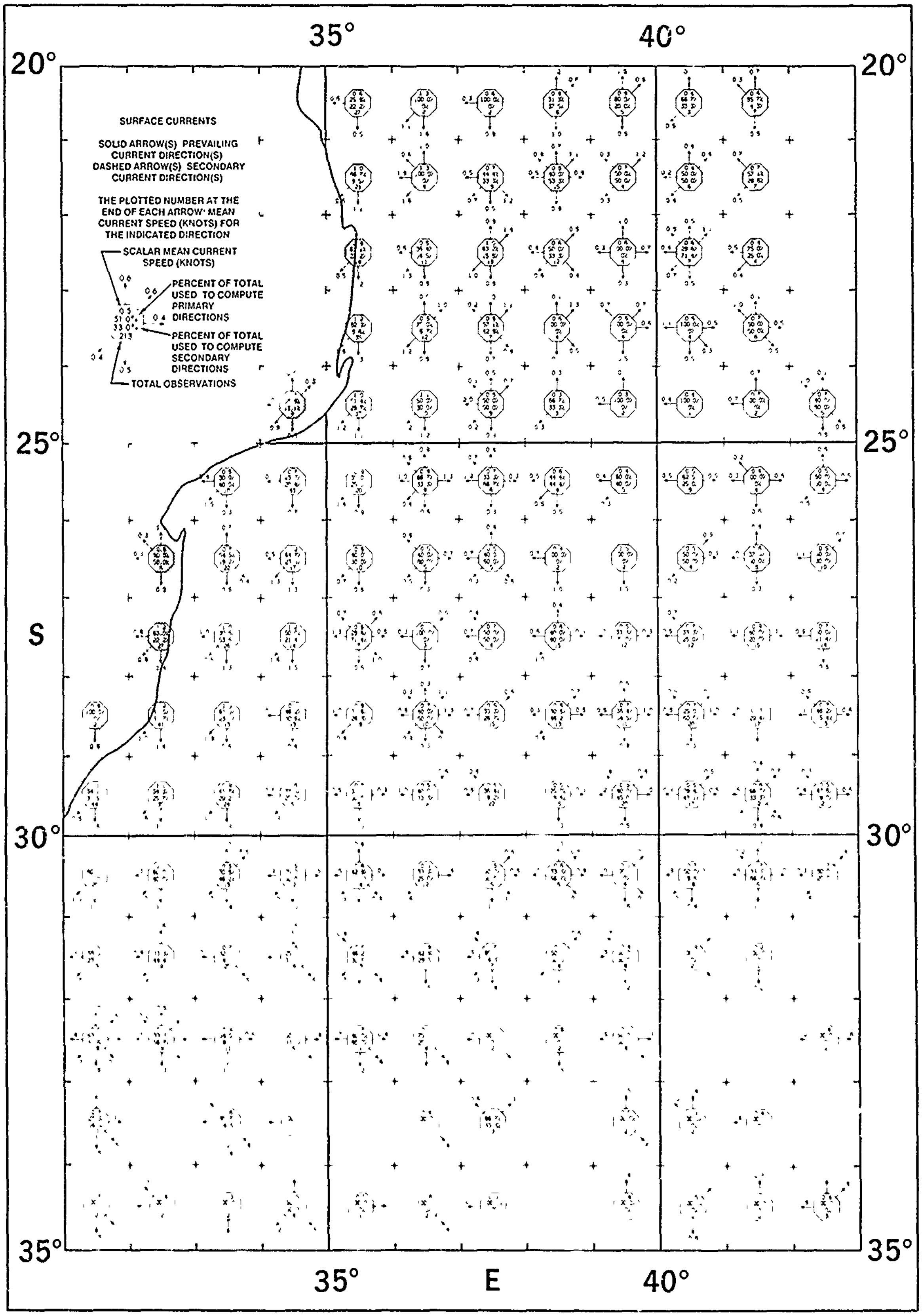


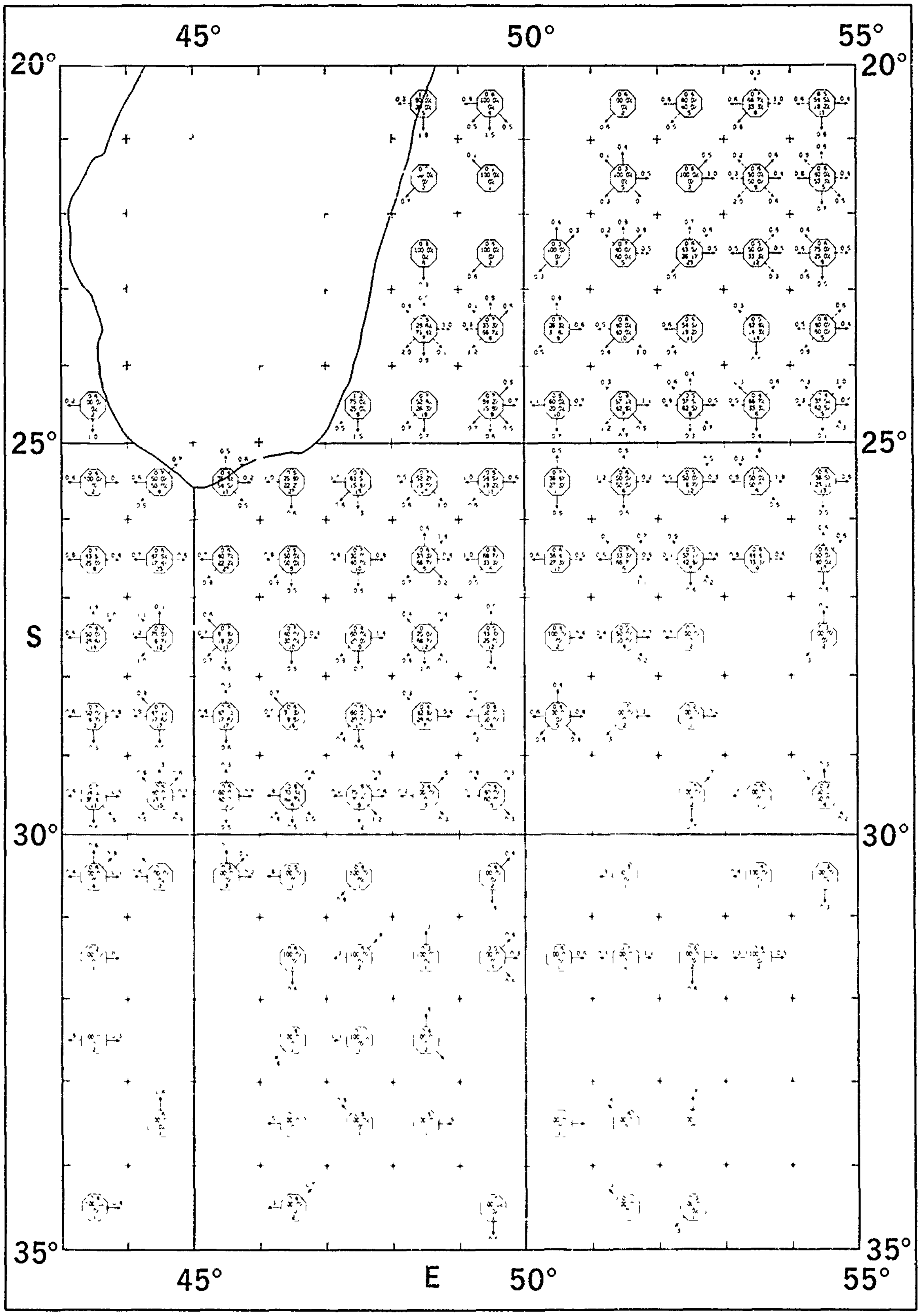

35°
40°
20°
25°
30°
35°
S
E
WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
Height Percent
≤2 10.0
3-4 20.0
5-6 30.0
7-9 20.0
10-12 10.0
≥13 10.0
N = 1363
EXAMPLE: 30.0% OF ALL WAVE HEIGHTS WERE IN THE RANGE 5 - 6 FEET
N = OBSERVATION COUNT
WAVE DATA FOR THESE TABLES WERE SELECTED FROM THE HIGHER OF SEA OR SWELL WHEN BOTH WERE REPORTED

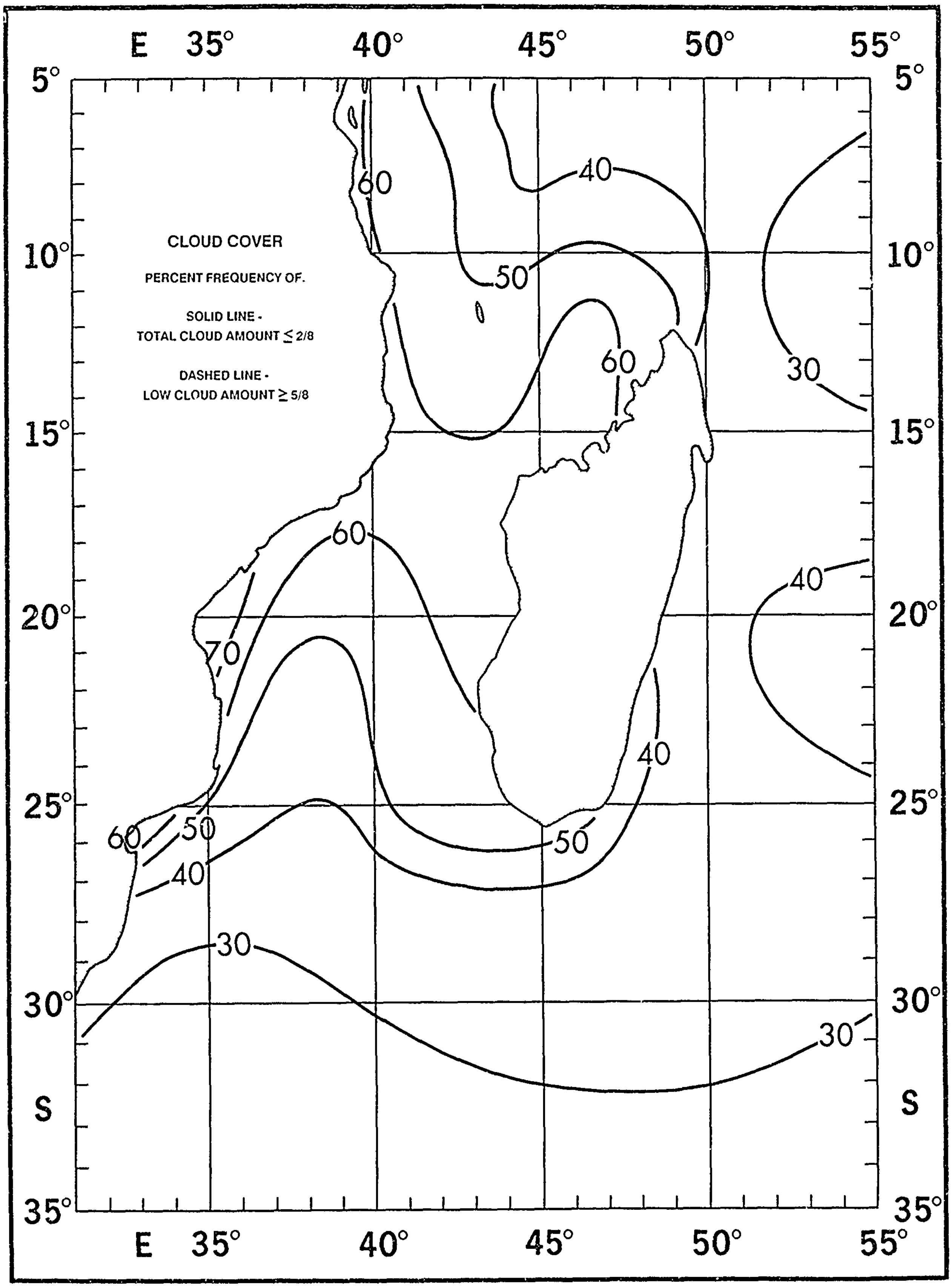

45°
50°
55°
20°
25°
30°
35°
S
E


35°
40°
5°
10°
S
15°
20°
E
SURFACE CURRENTS
SOLID ARROW(S)· PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW. MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS

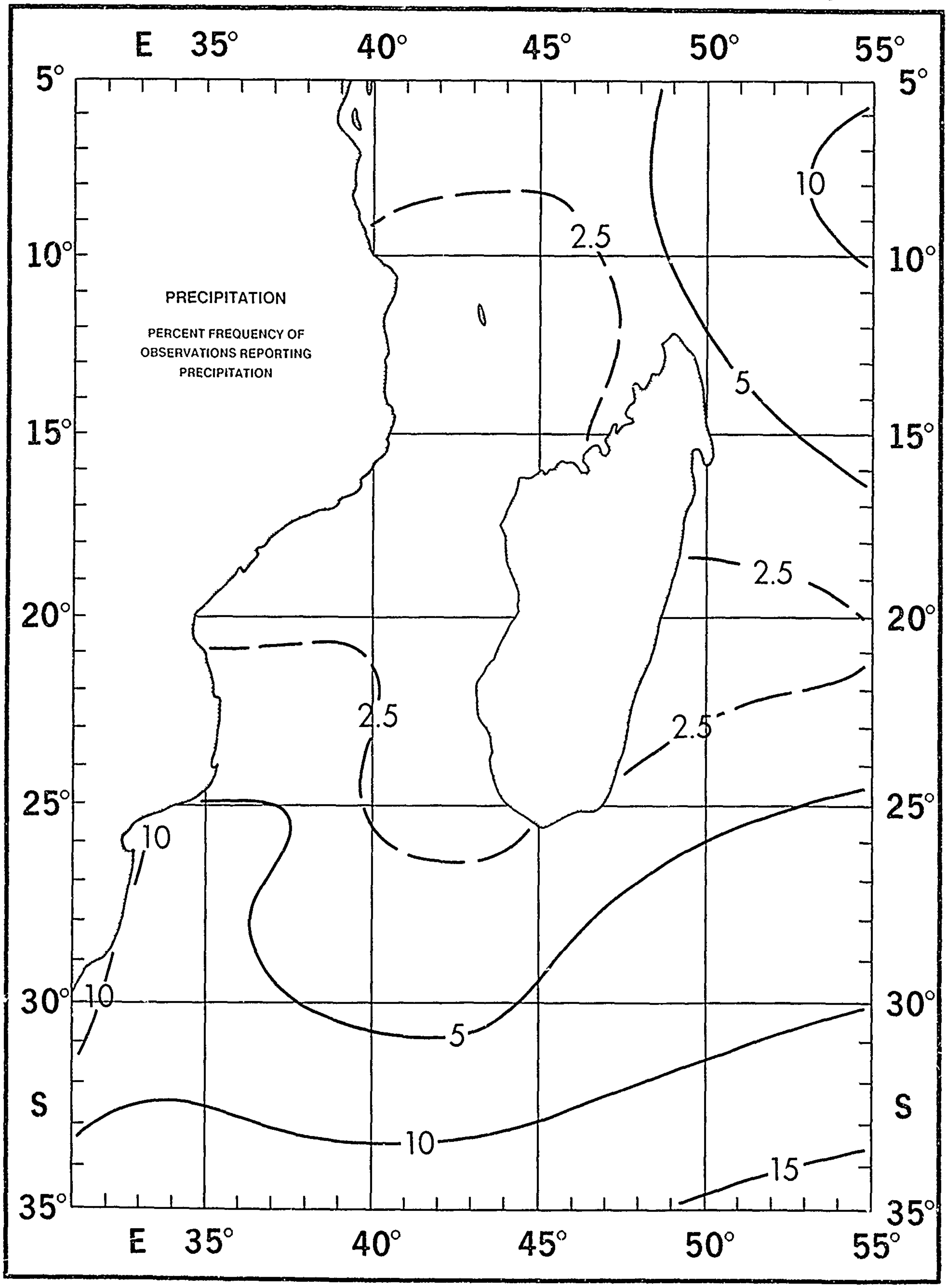

45°
50°
55°
5°
10°
15°
20°
S
E


35°
40°
20°
20°
SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW: MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS
25°
25°
S
30°
30°
35°
35°
35°
E
40°


45°
50°
55°
20°
25°
30°
35°
S
E

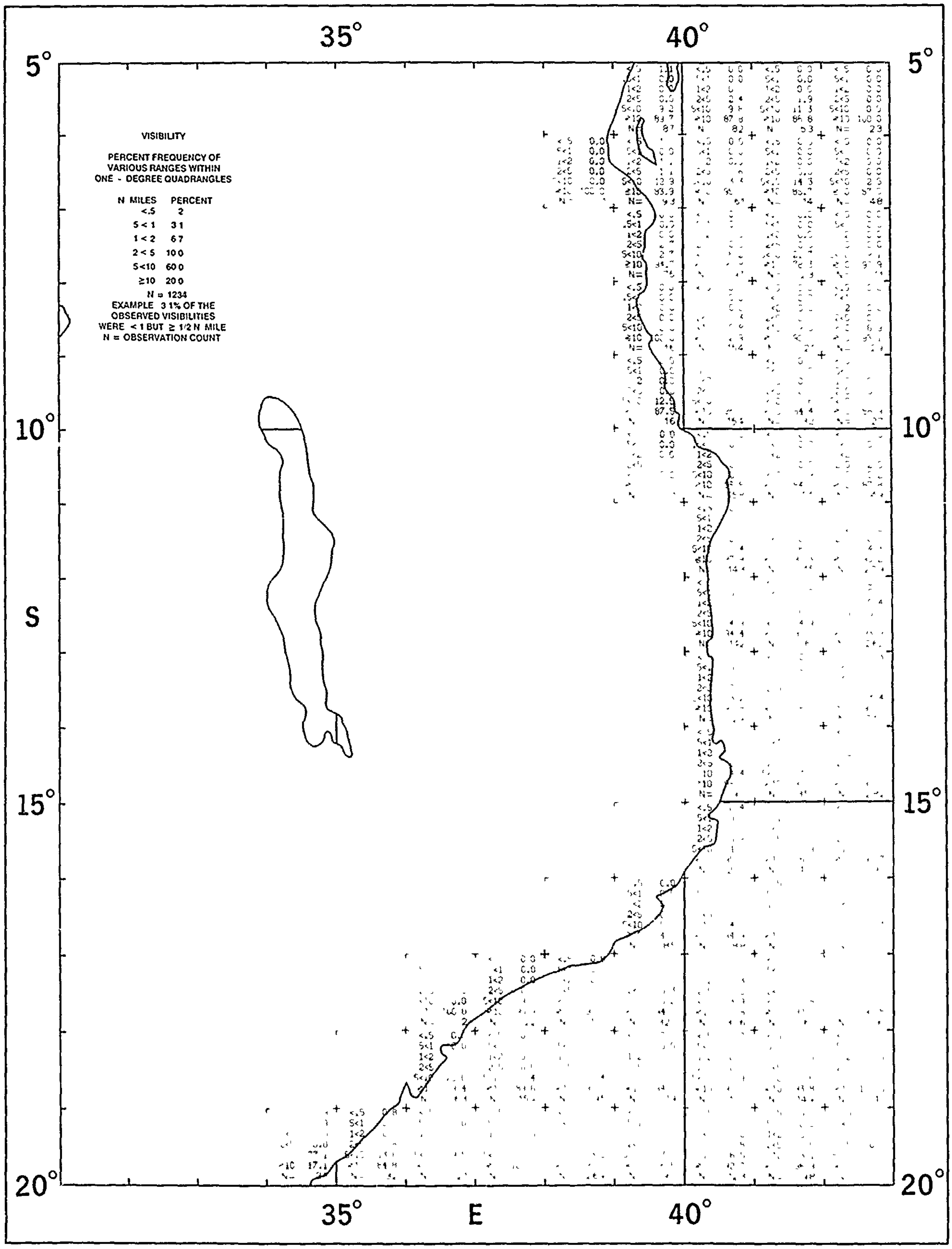


E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° 35°
S
CLOUD COVER
PERCENT FREQUENCY OF.
SOLID LINE - TOTAL CLOUD AMOUNT ≤ 2/8
DASHED LINE - LOW CLOUD AMOUNT ≥ 5/8
60
40
50
60
30
60
40
70
40
60
50
50
40
30
30


E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
PRECIPITATION
PERCENT FREQUENCY OF OBSERVATIONS REPORTING PRECIPITATION
2.5
5
10
15

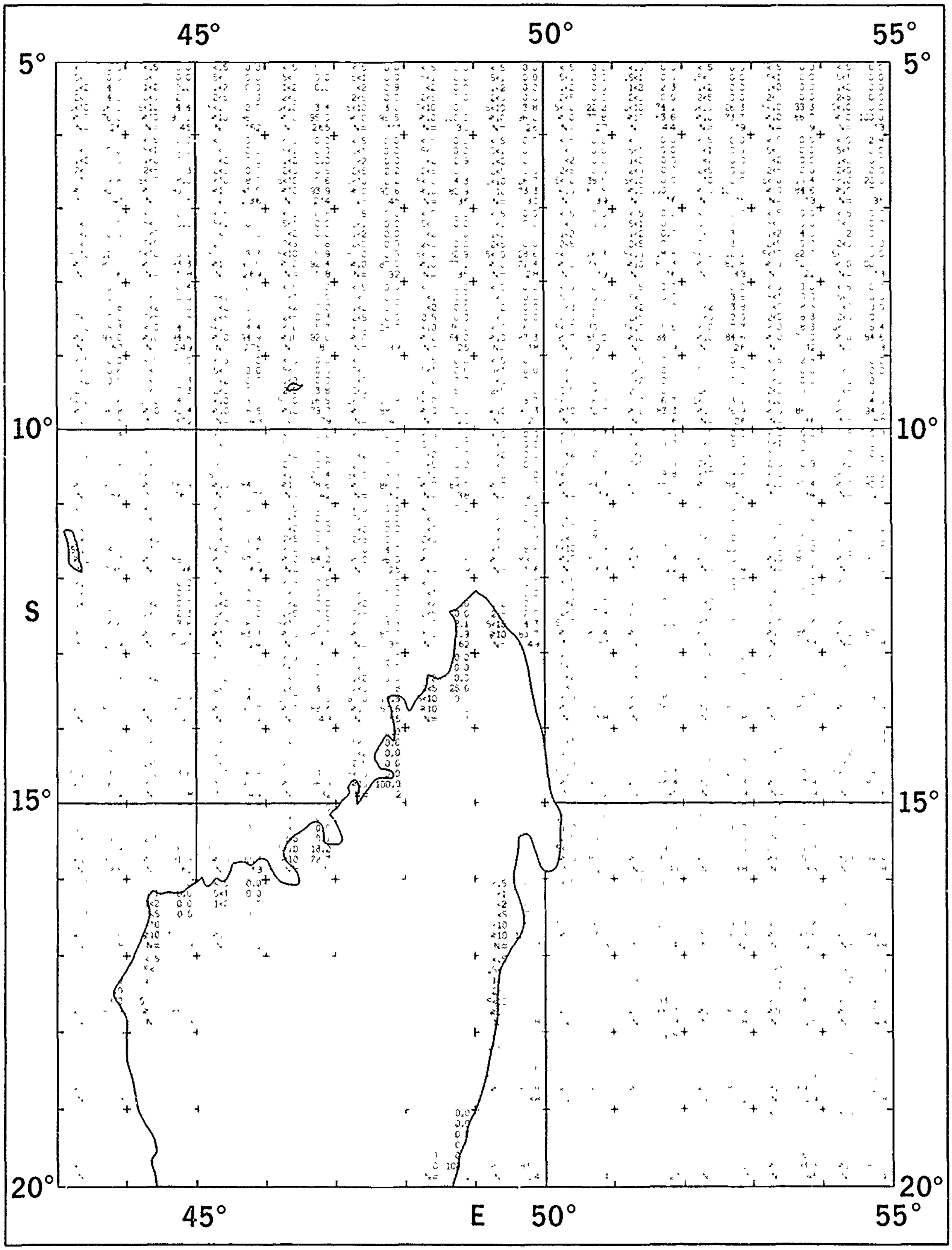
October

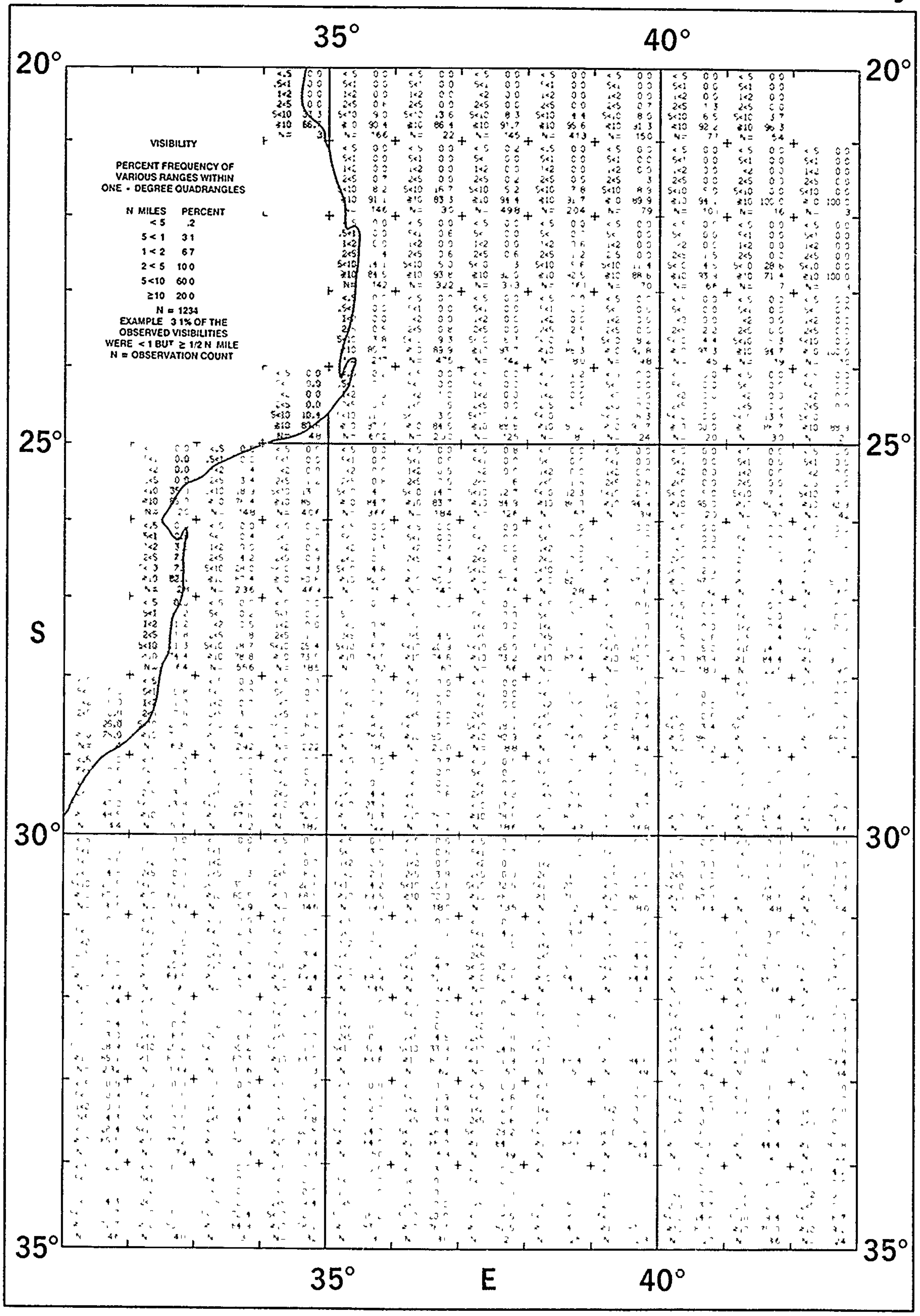
Visibility



October

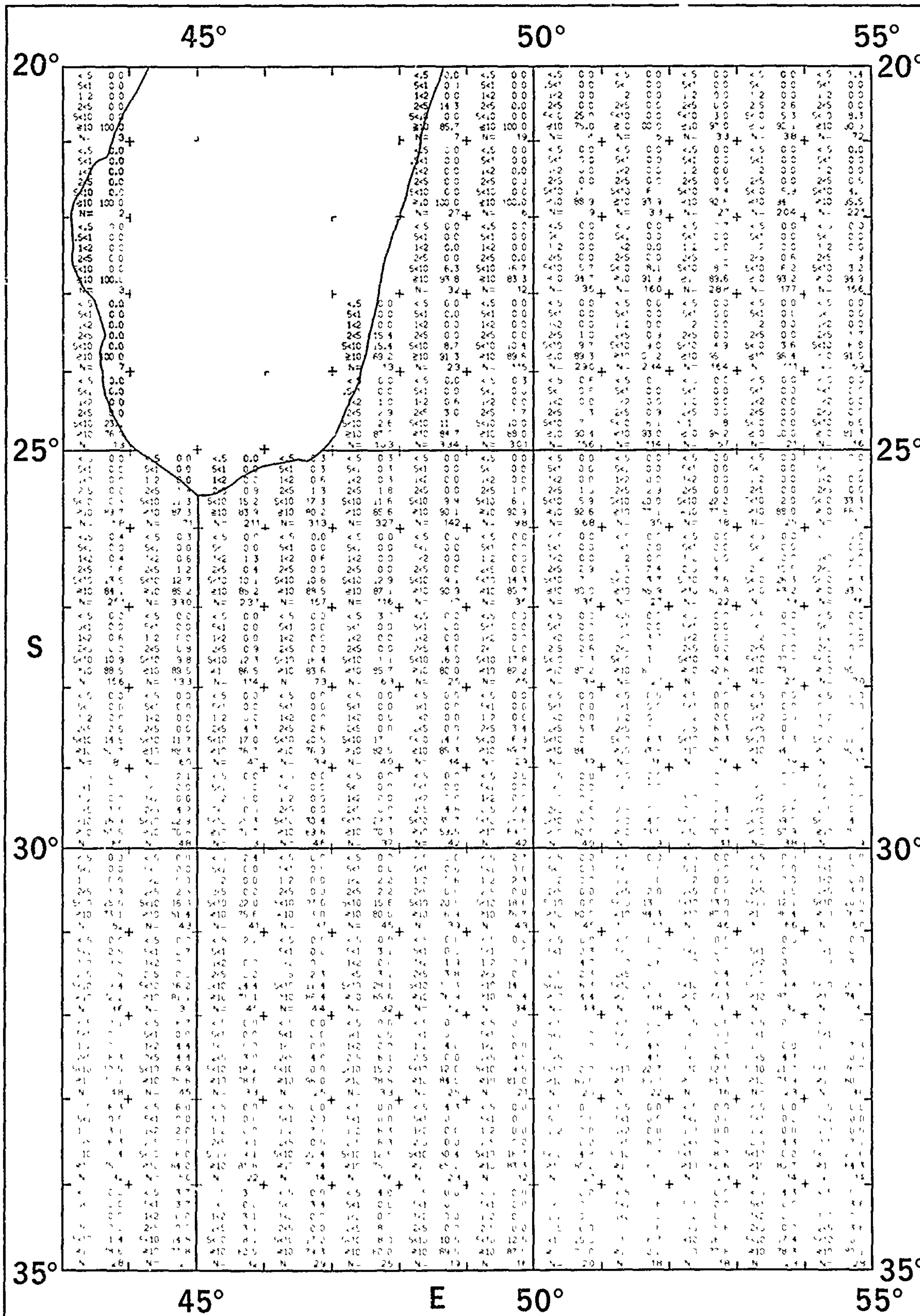
Visibility




VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
< 5 .2
5 < 1 3 1
1 < 2 6 7
2 < 5 10 0
5 < 10 60 0
≥ 10 20 0
N = 1234
EXAMPLE 3 1% OF THE OBSERVED VISIBILITIES WERE < 1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT
35°
40°
20°
25°
30°
35°
S
E

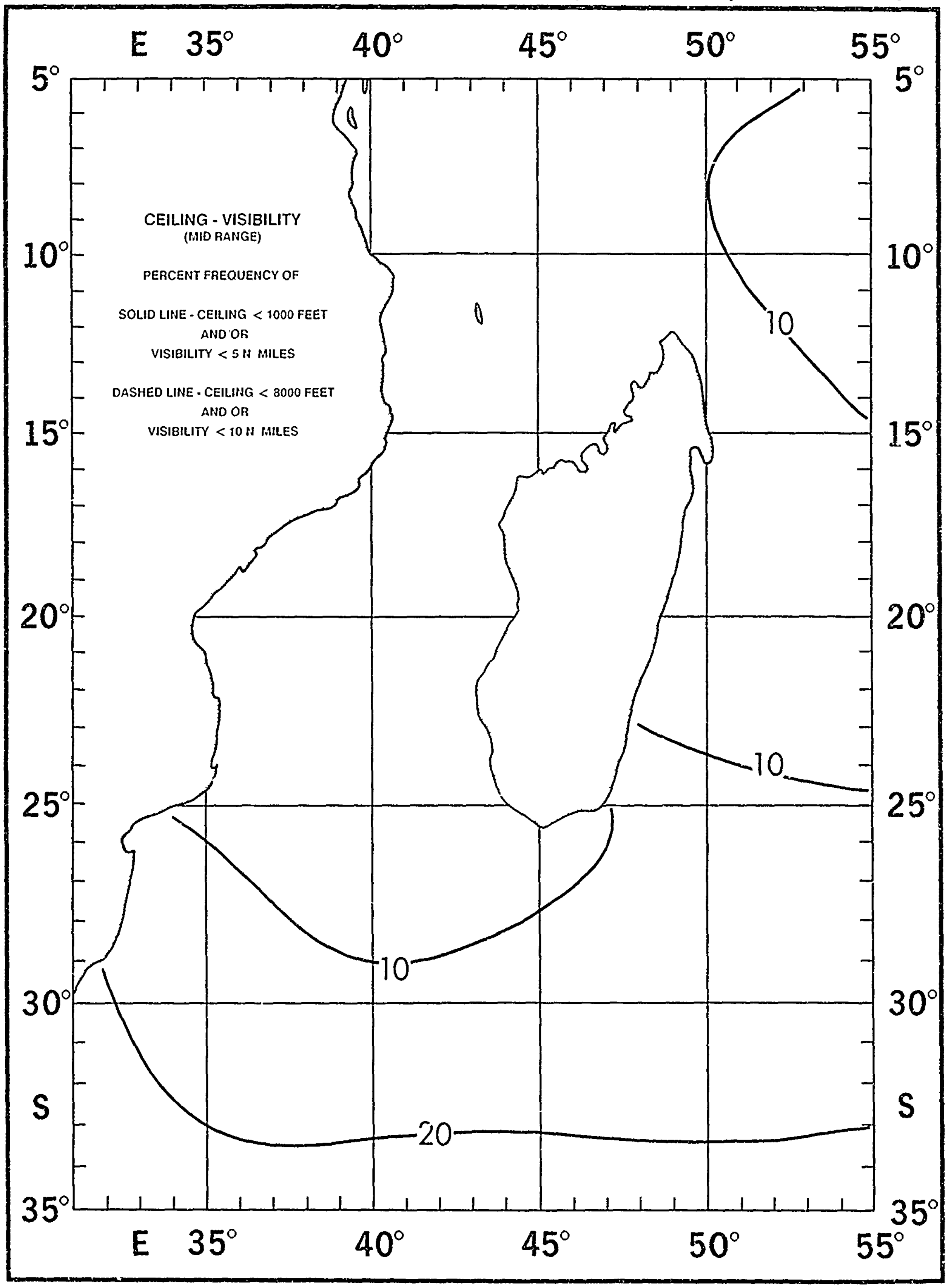
October

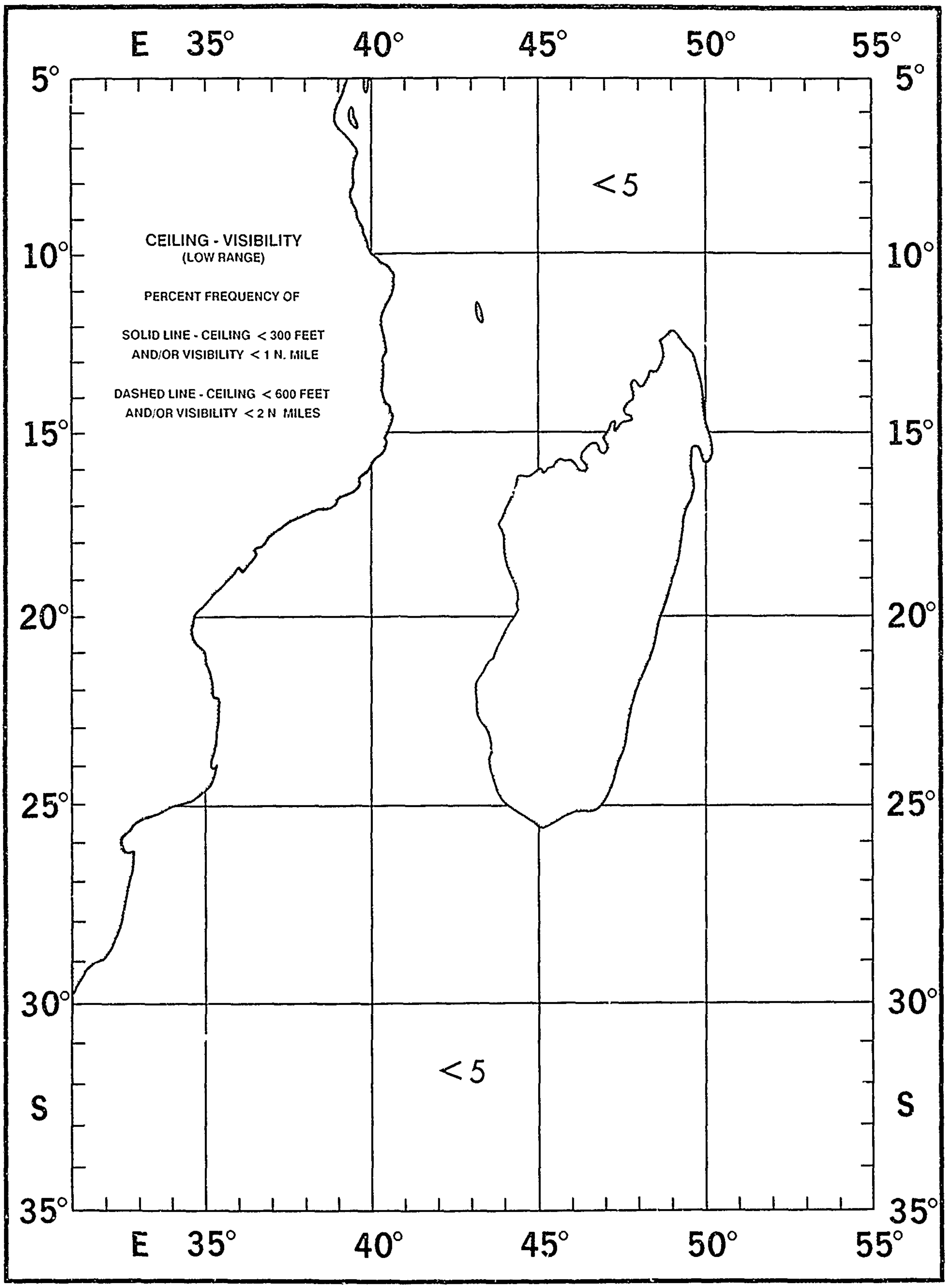
Visibility

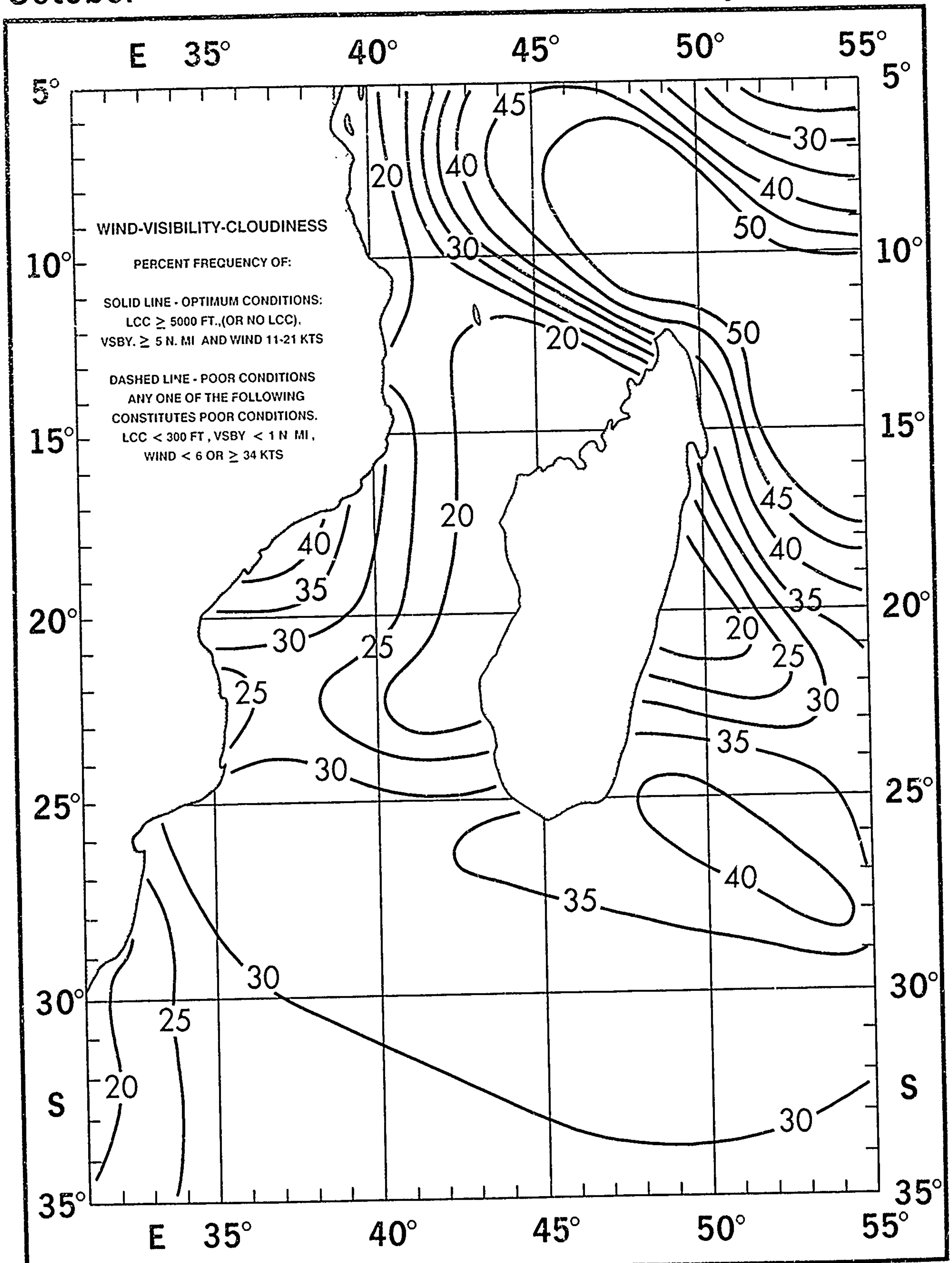


October

Ceiling - Visibility (Mid Range)

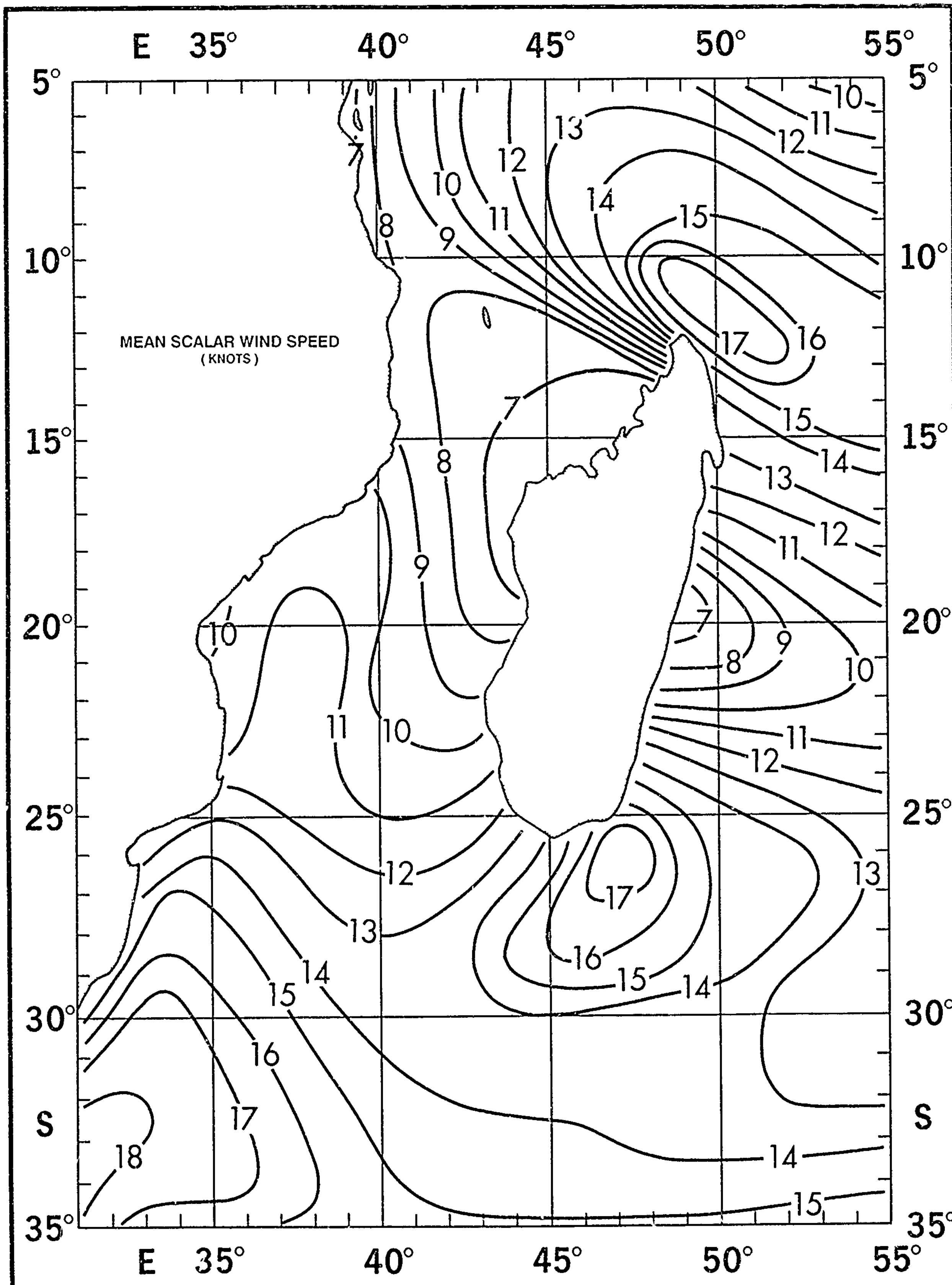



E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° 35°
S
CEILING - VISIBILITY
(LOW RANGE)
PERCENT FREQUENCY OF
SOLID LINE - CEILING < 300 FEET
AND/OR VISIBILITY < 1 N. MILE
DASHED LINE - CEILING < 600 FEET
AND/OR VISIBILITY < 2 N. MILES
<5
<5

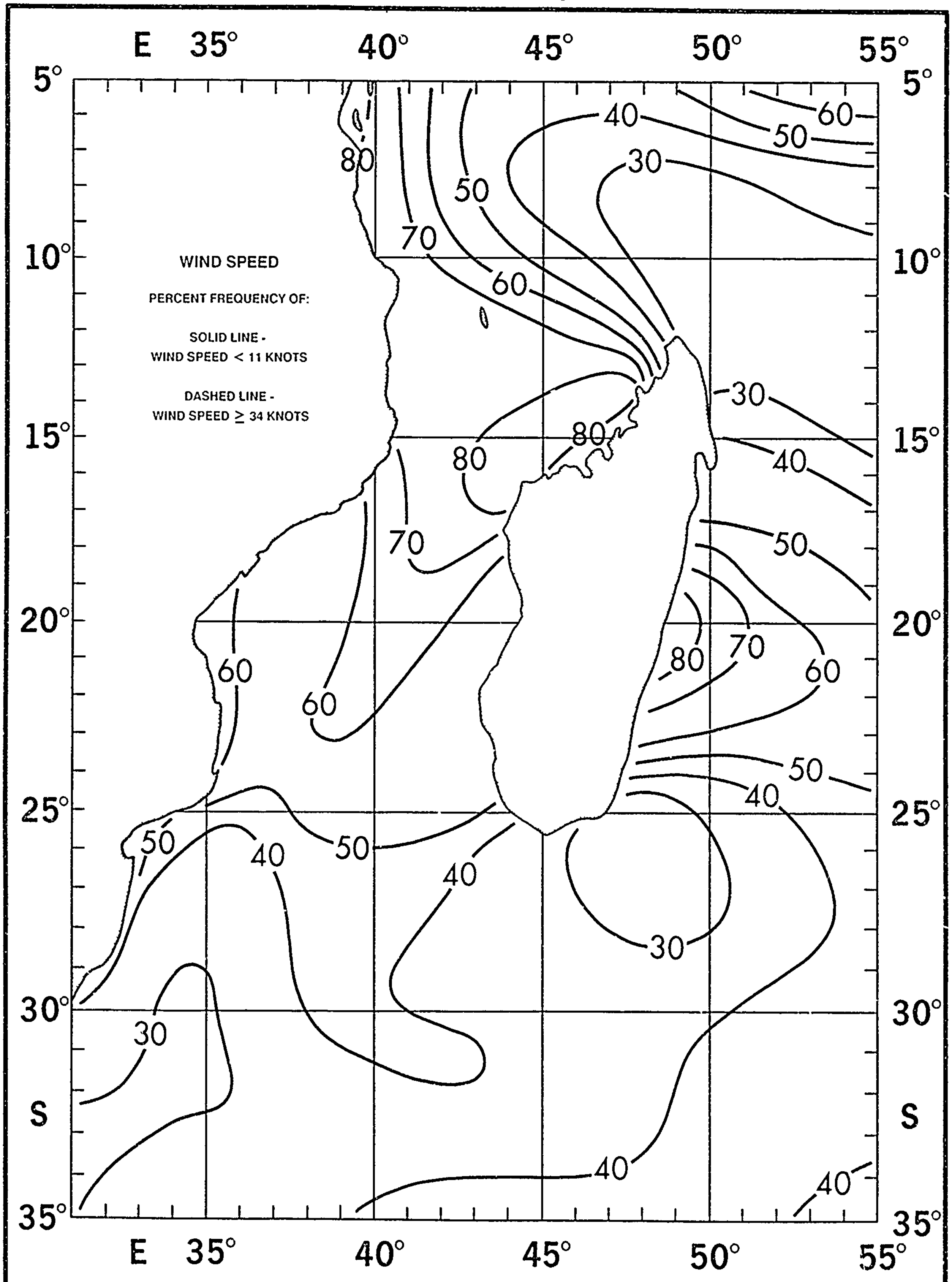

WIND-VISIBILITY-CLOUDINESS
PERCENT FREQUENCY OF:
SOLID LINE - OPTIMUM CONDITIONS:
LCC ≥ 5000 FT.,(OR NO LCC),
VSBY. ≥ 5 N. MI AND WIND 11-21 KTS
DASHED LINE - POOR CONDITIONS
ANY ONE OF THE FOLLOWING
CONSTITUTES POOR CONDITIONS.
LCC < 300 FT, VSBY < 1 N MI,
WIND < 6 OR ≥ 34 KTS
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°

October

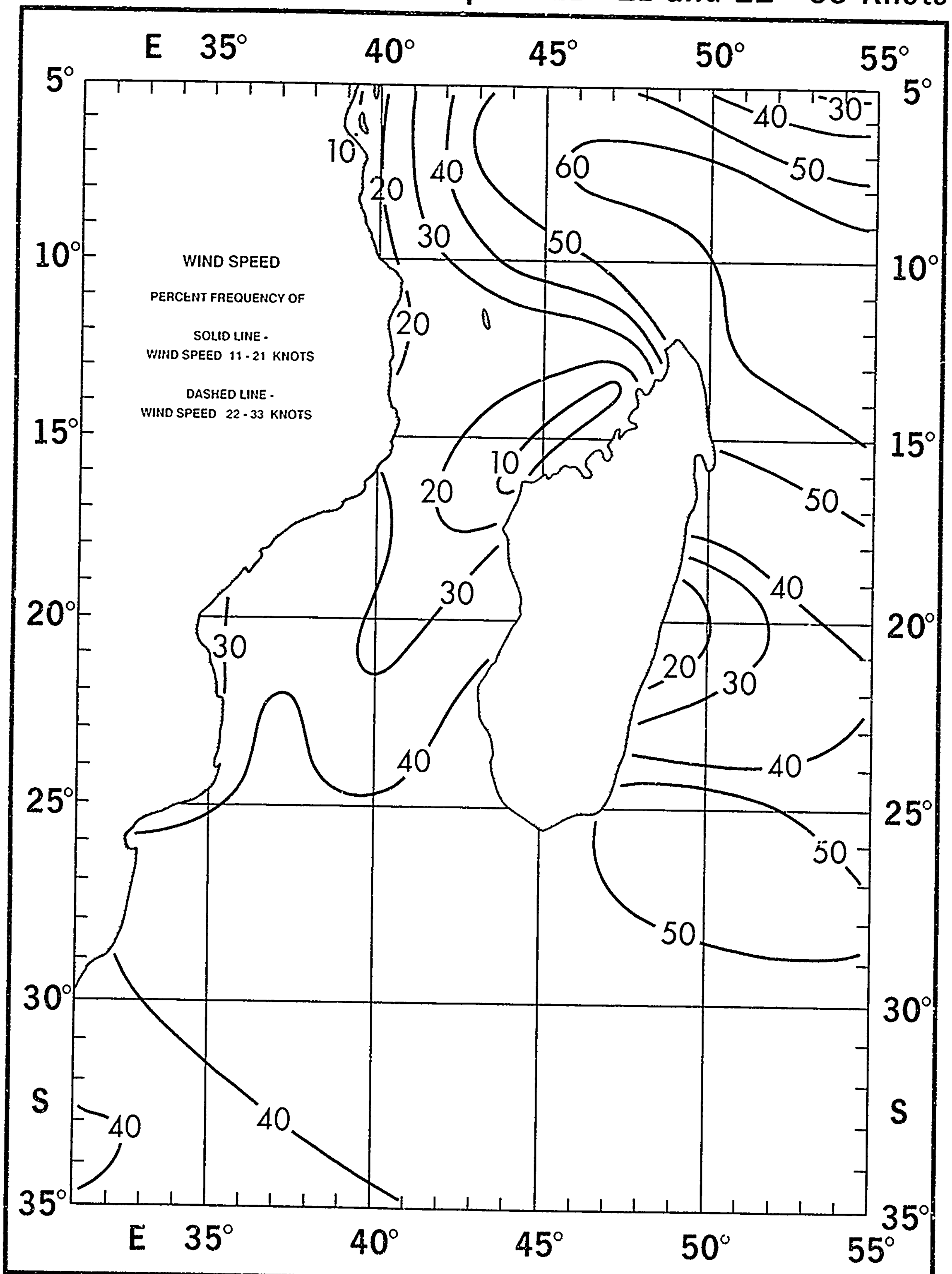
Mean Scalar Wind Speed



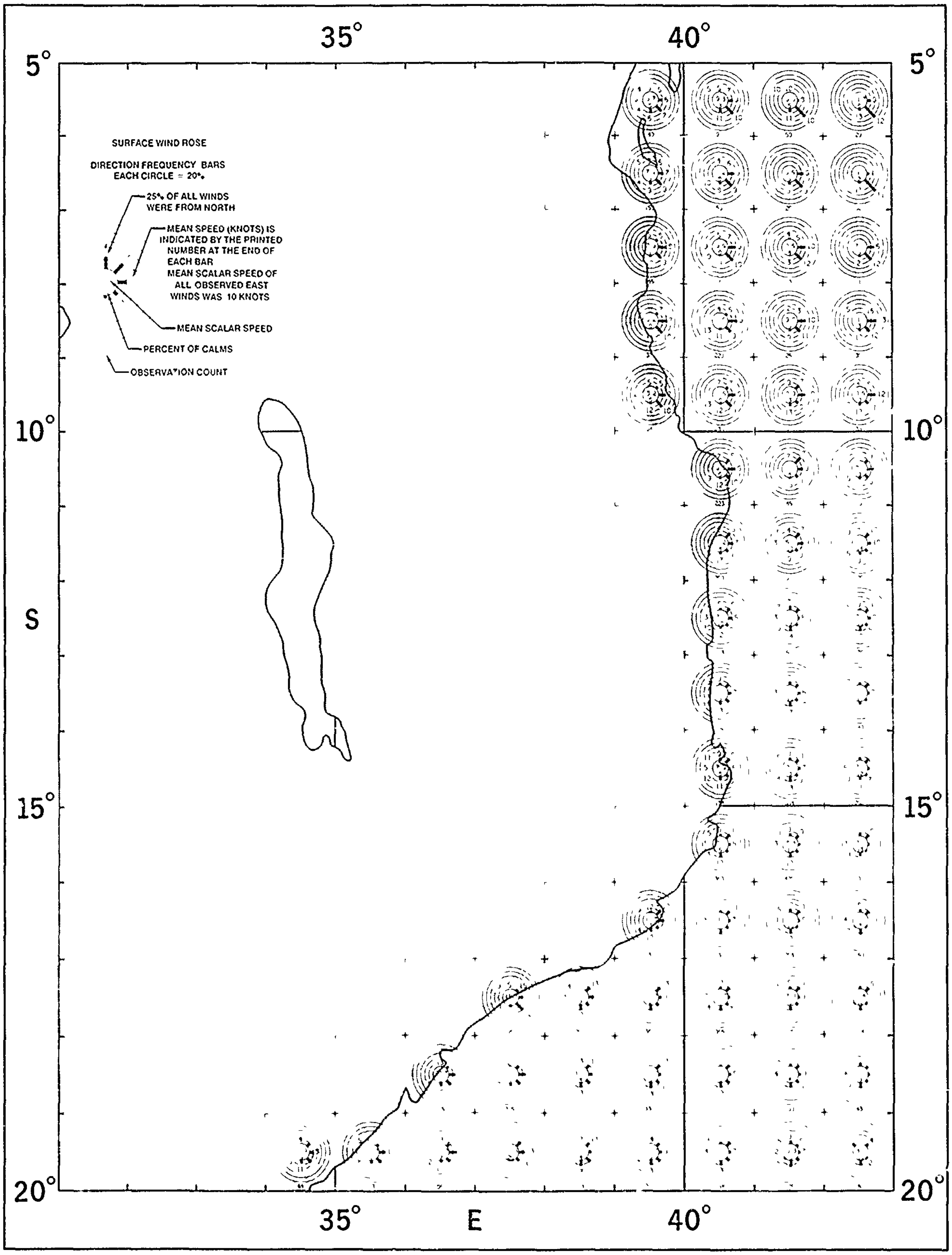
Wind Speed <11 and ≥34 Knots

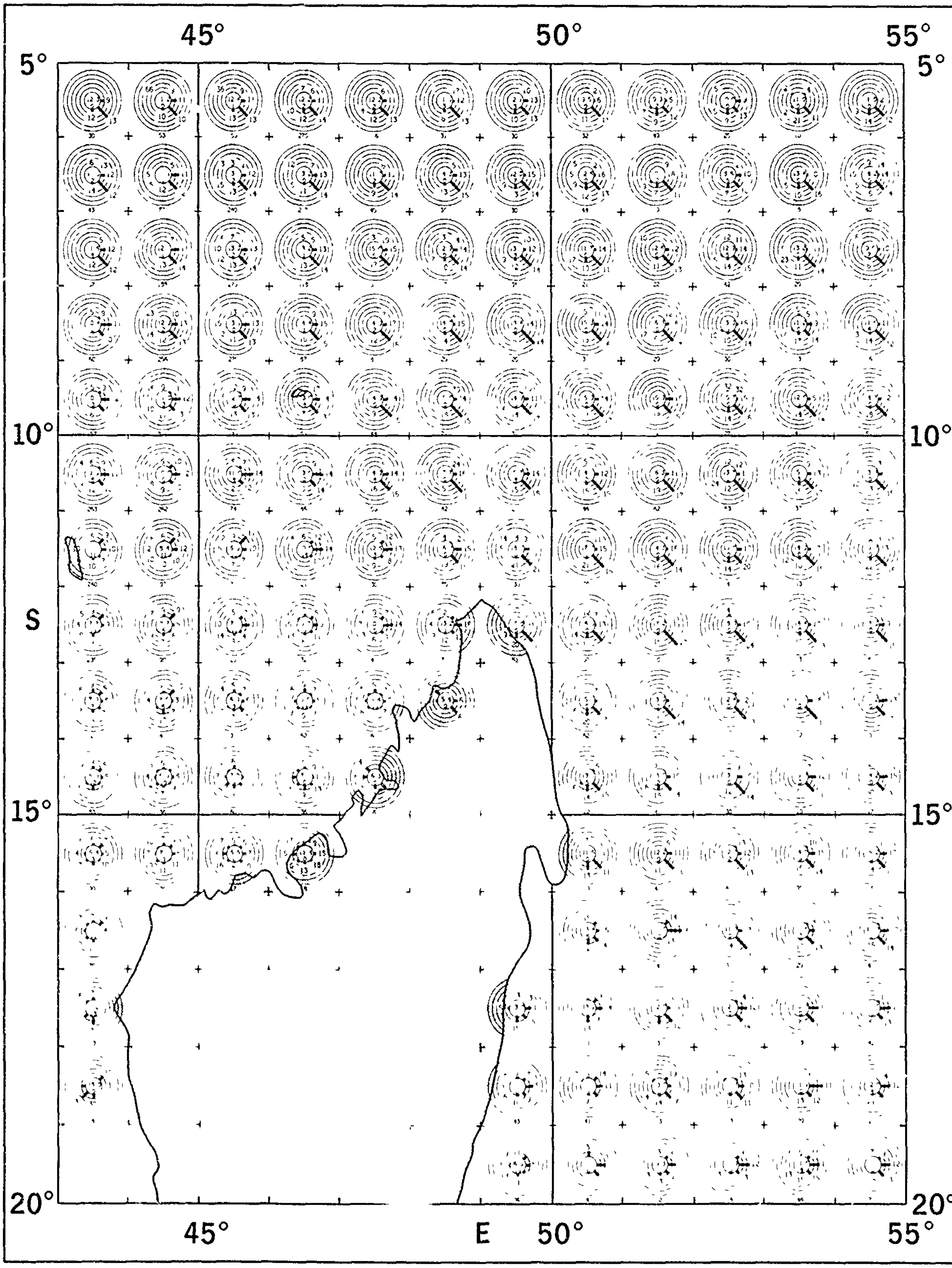


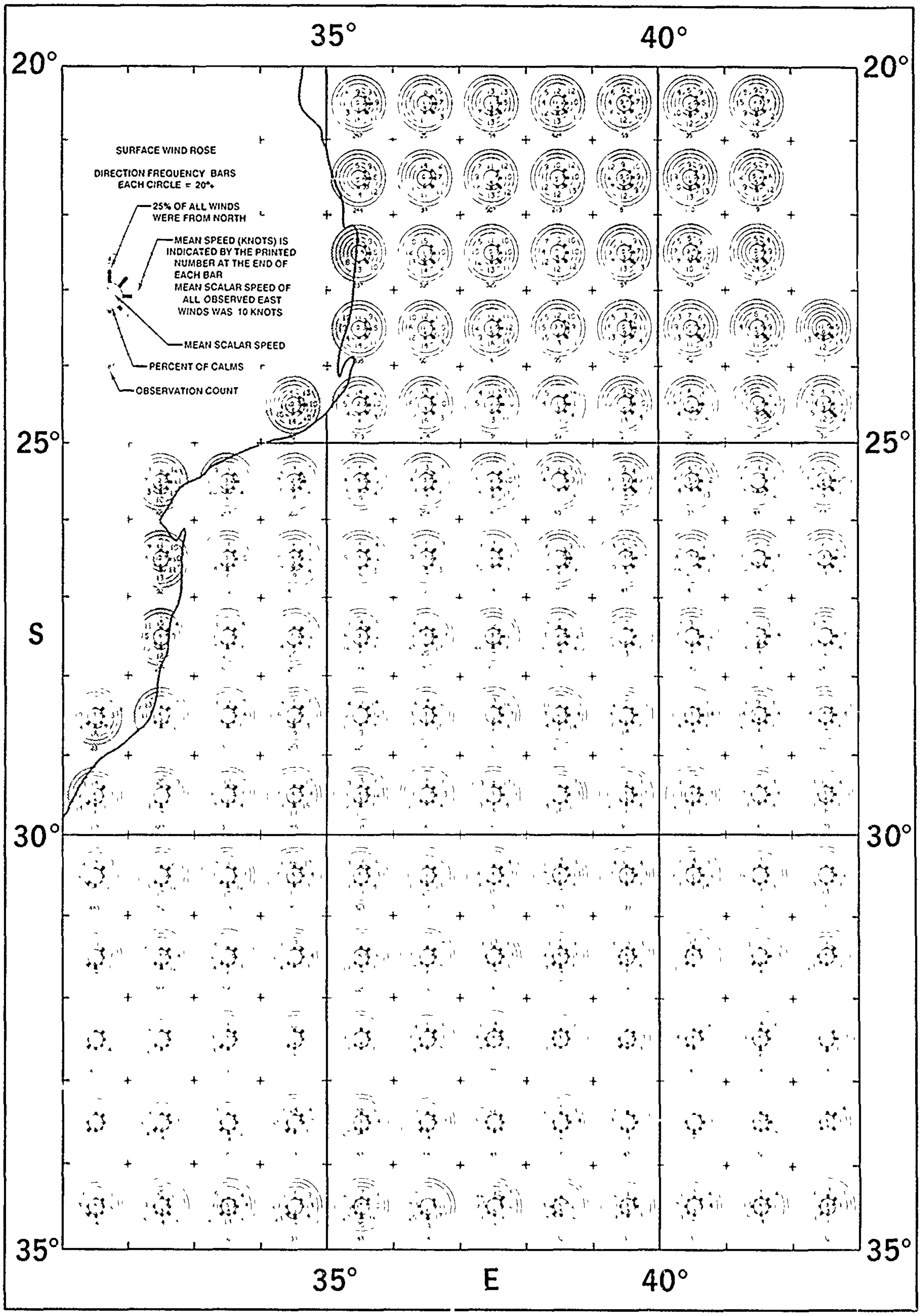
October Wind Speed 11 - 21 and 22 - 33 Knots

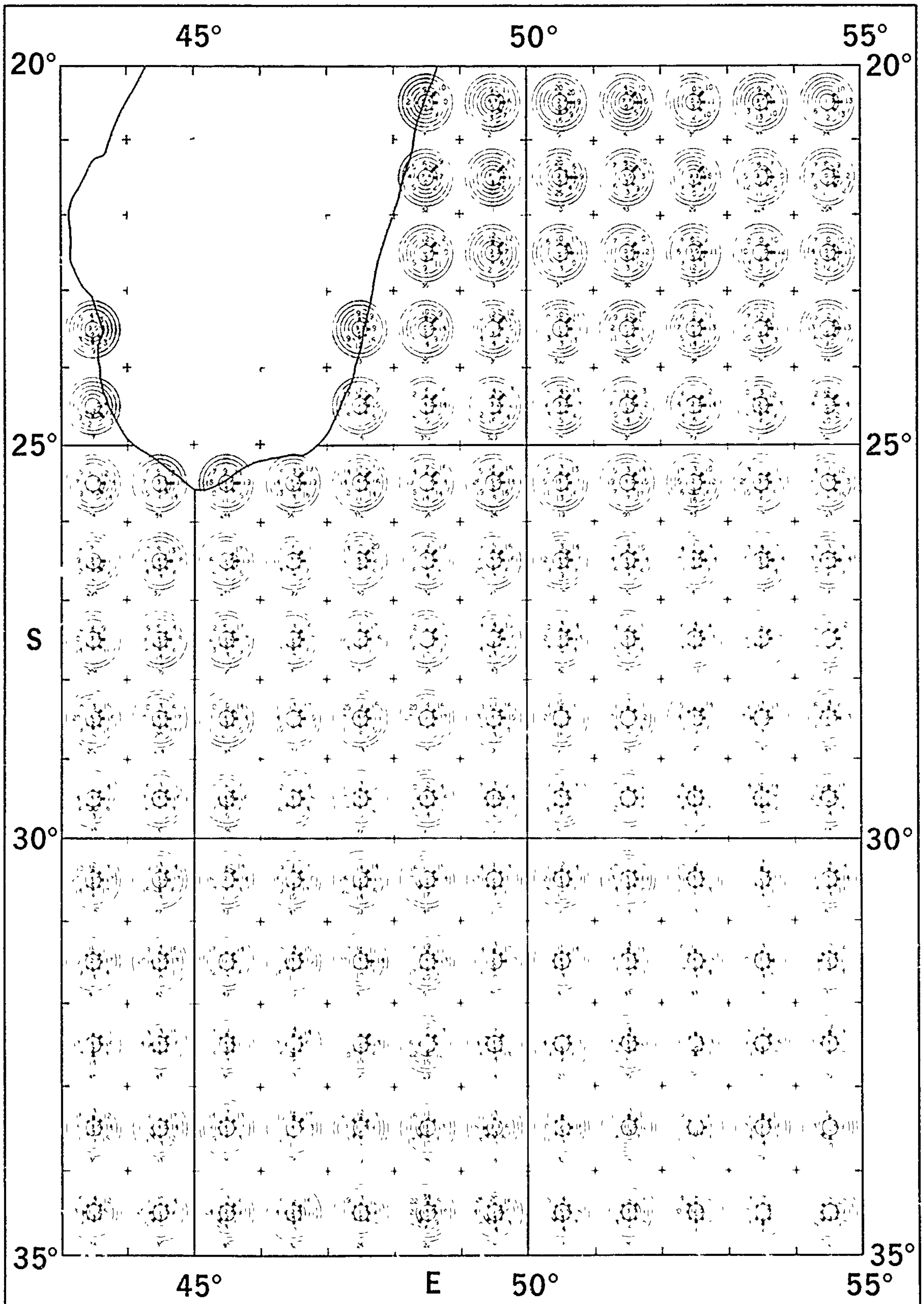


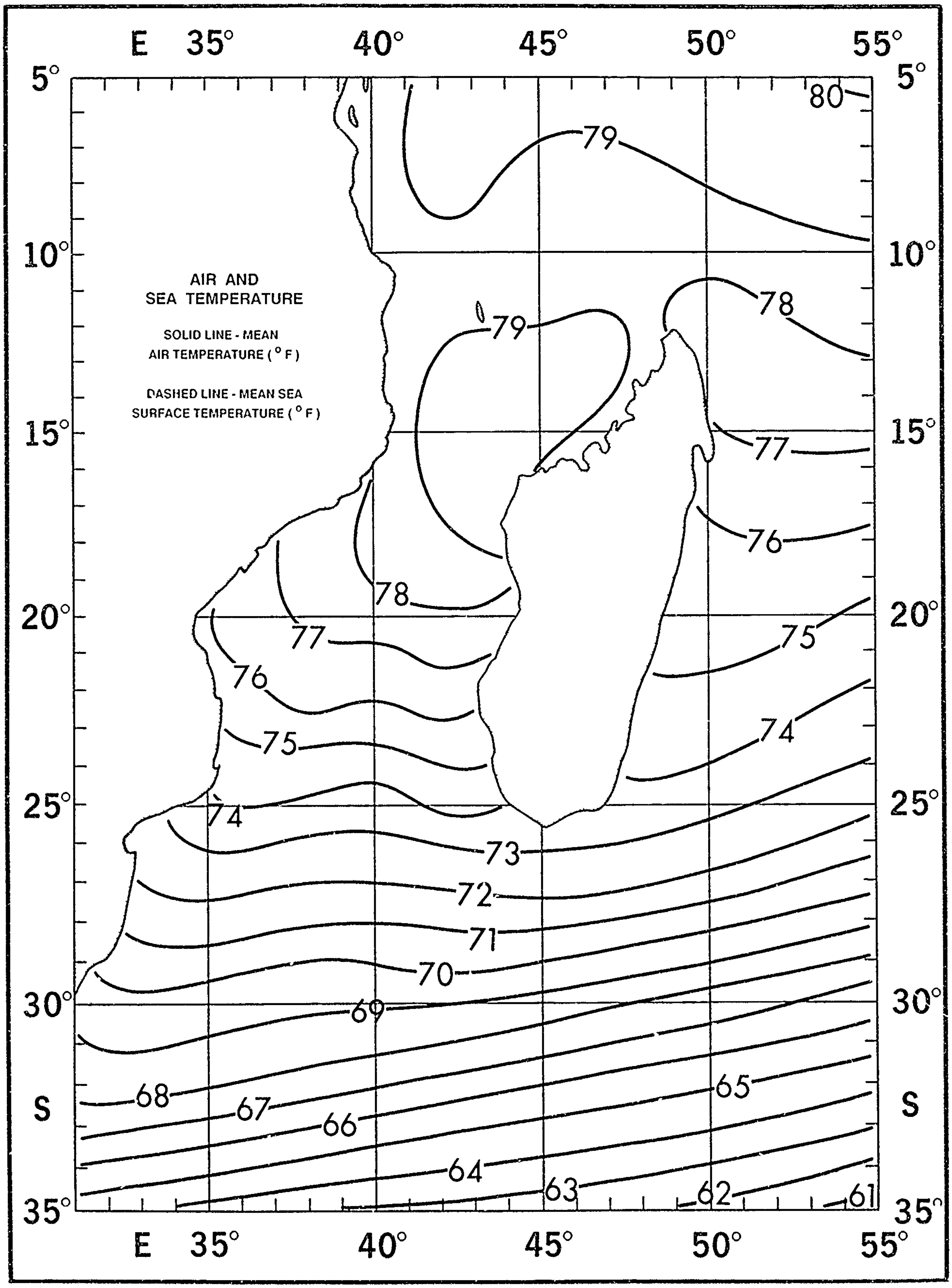
October — Surface Wind Roses

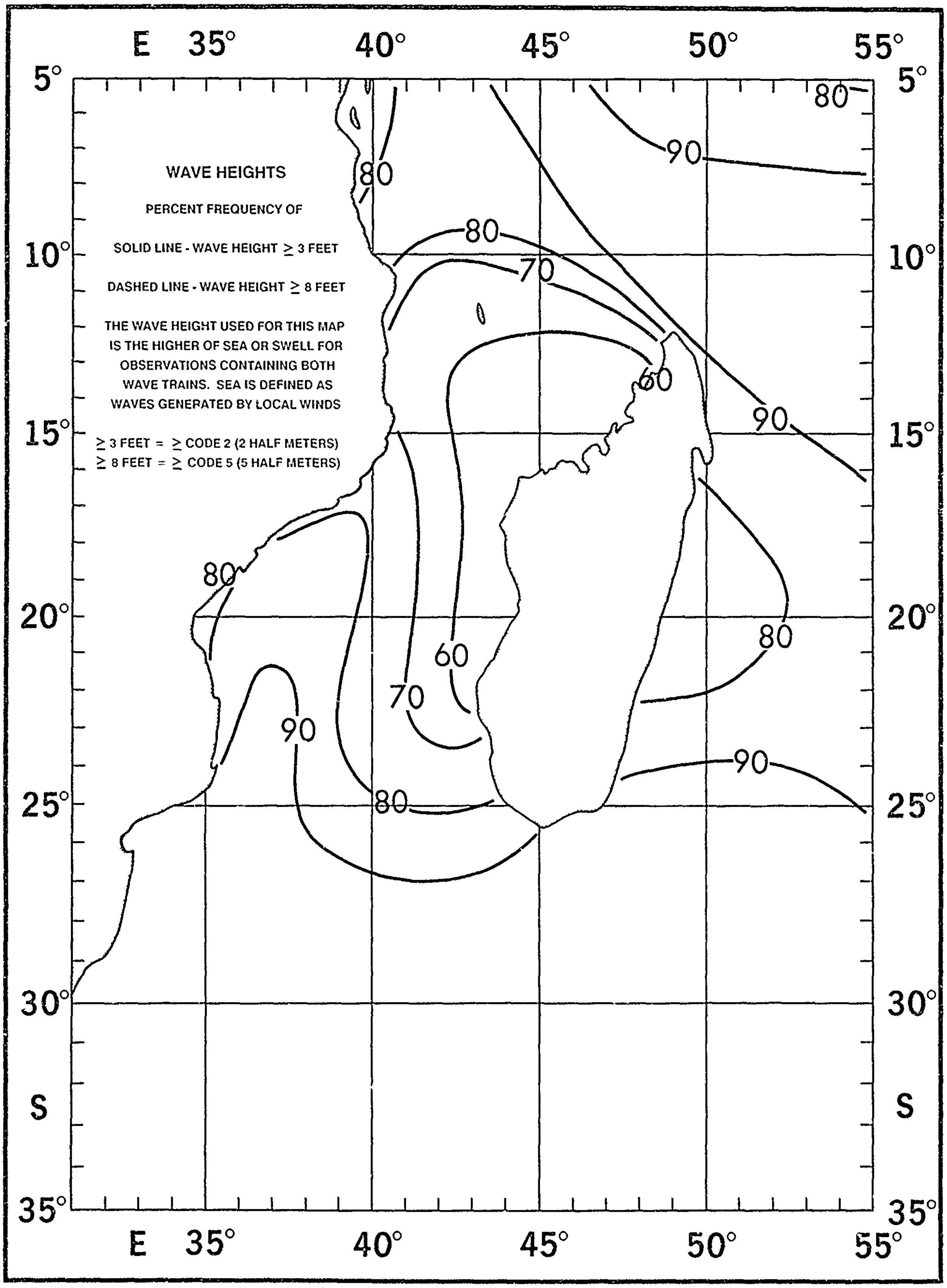


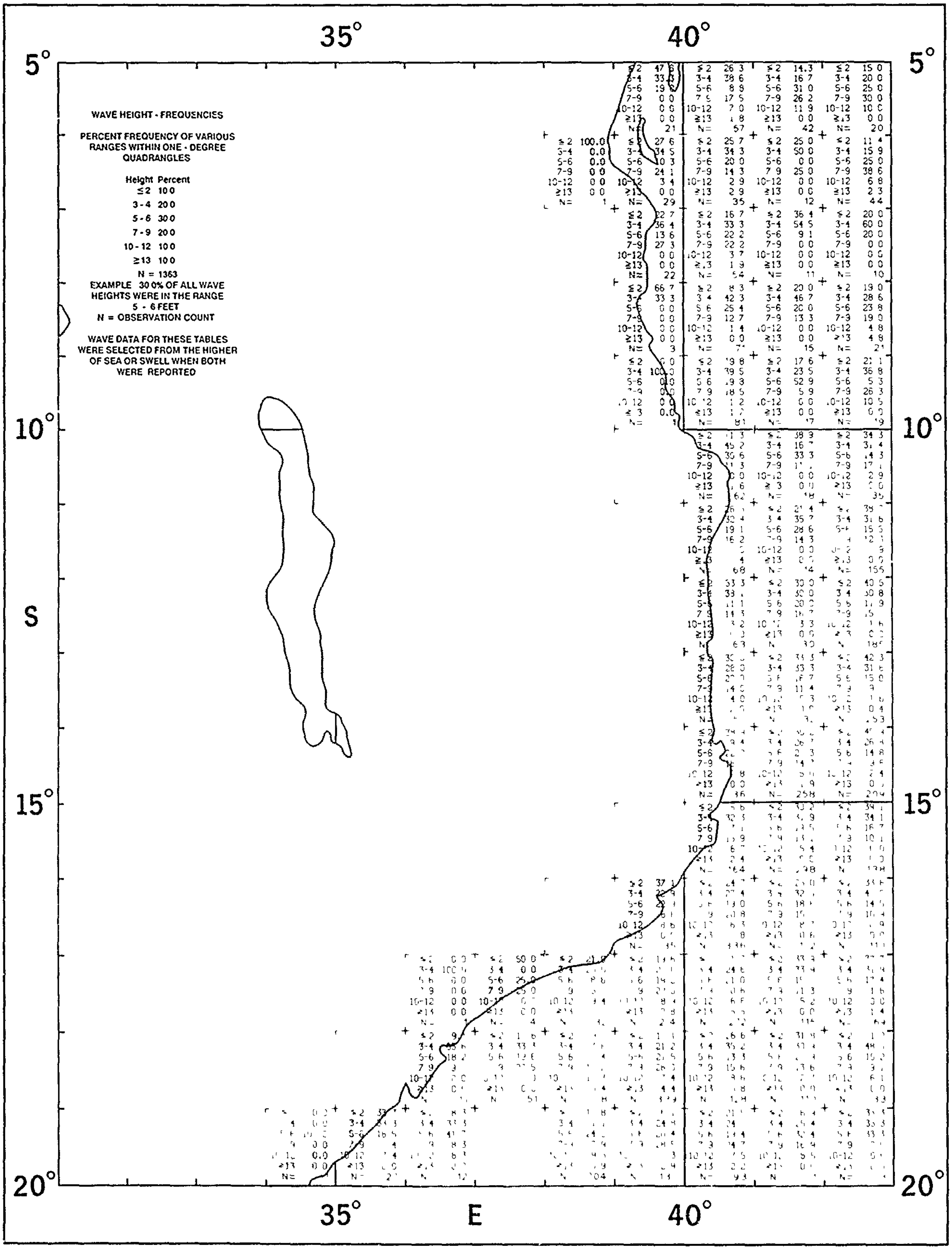

45°
50°
55°
5°
10°
S
15°
20°
E


35°
40°
20°
20°
SURFACE WIND ROSE
DIRECTION FREQUENCY BARS
EACH CIRCLE = 20%
25% OF ALL WINDS
WERE FROM NORTH
MEAN SPEED (KNOTS) IS
INDICATED BY THE PRINTED
NUMBER AT THE END OF
EACH BAR
MEAN SCALAR SPEED OF
ALL OBSERVED EAST
WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT
25°
25°
S
30°
30°
35°
35°
35°
E
40°


45°
50°
55°
20°
25°
30°
35°
S
E

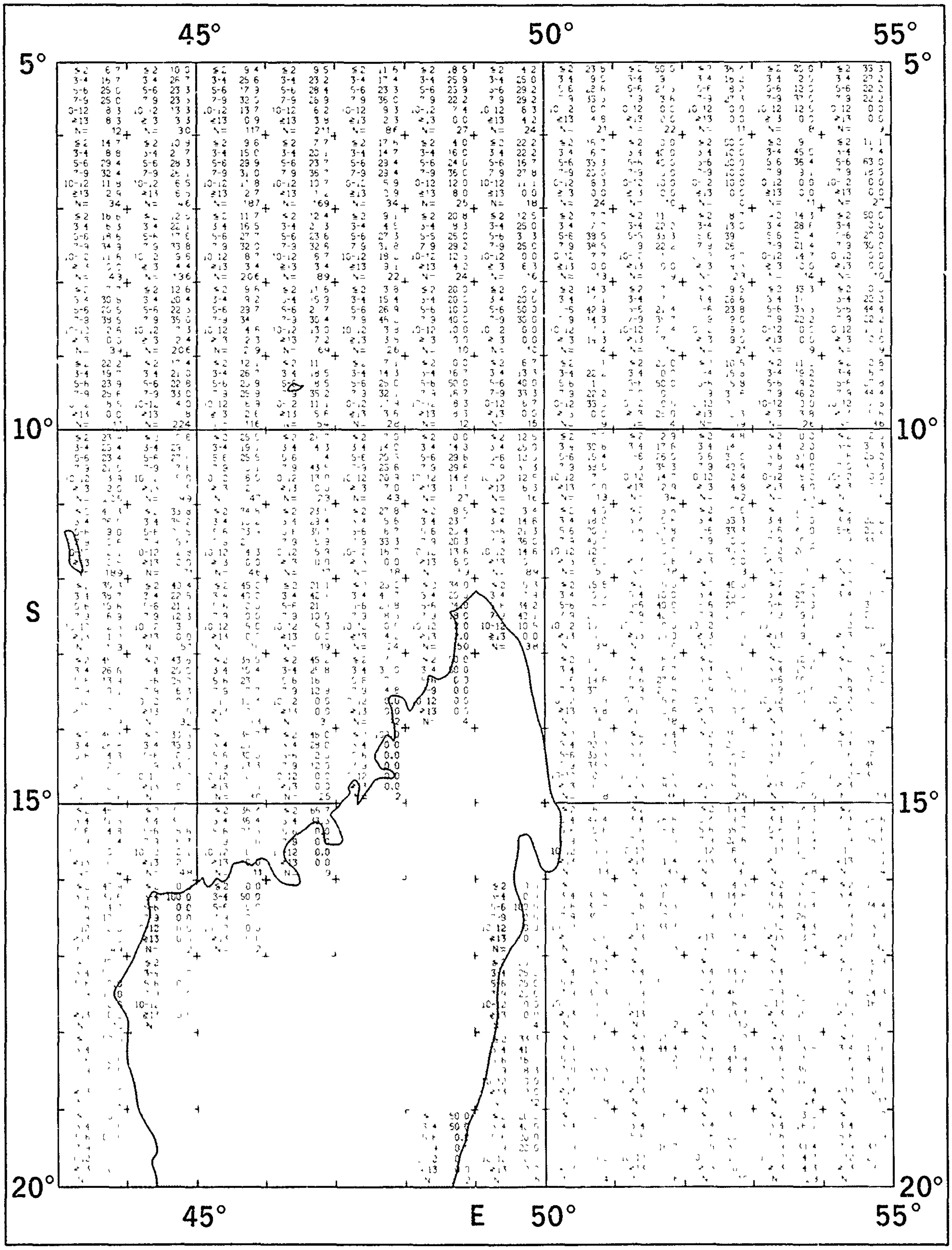

E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
AIR AND
SEA TEMPERATURE
SOLID LINE - MEAN
AIR TEMPERATURE (° F)
DASHED LINE - MEAN SEA
SURFACE TEMPERATURE (° F)
80
79
79
78
77
76
78
77
75
76
75
74
74
73
72
71
70
69
68
67
66
65
64
63
62
61

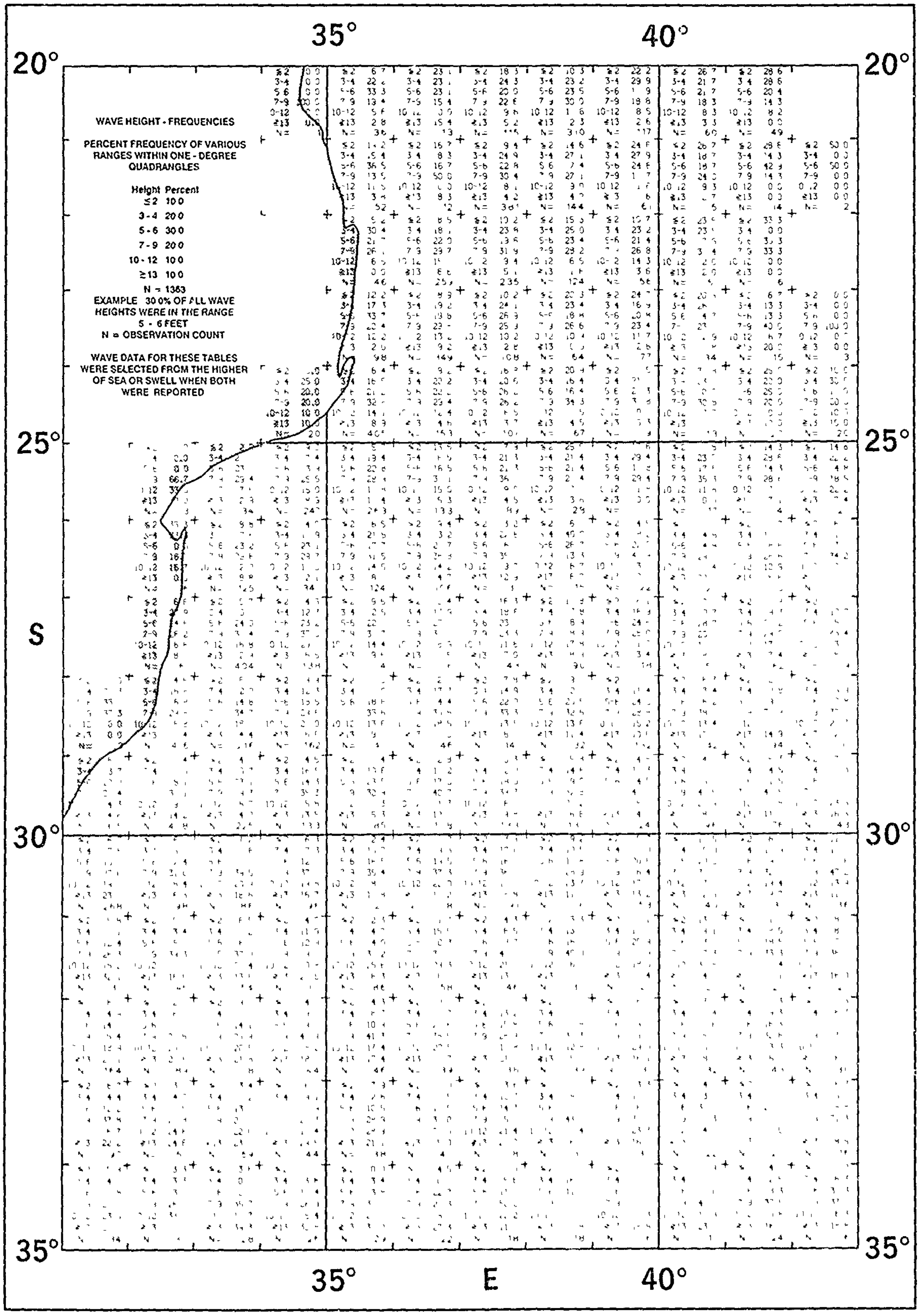

E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
WAVE HEIGHTS
PERCENT FREQUENCY OF
SOLID LINE - WAVE HEIGHT ≥ 3 FEET
DASHED LINE - WAVE HEIGHT ≥ 8 FEET
THE WAVE HEIGHT USED FOR THIS MAP IS THE HIGHER OF SEA OR SWELL FOR OBSERVATIONS CONTAINING BOTH WAVE TRAINS. SEA IS DEFINED AS WAVES GENERATED BY LOCAL WINDS
≥ 3 FEET = ≥ CODE 2 (2 HALF METERS)
≥ 8 FEET = ≥ CODE 5 (5 HALF METERS)
80
90
80
80
70
60
90
80
80
60
70
90
80
80
90


35°
40°
5°
10°
15°
20°
S
E
WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
Height Percent
≤2 100
3-4 200
5-6 300
7-9 200
10-12 100
≥13 100
N = 1363
EXAMPLE 30.0% OF ALL WAVE HEIGHTS WERE IN THE RANGE 5 - 6 FEET
N = OBSERVATION COUNT
WAVE DATA FOR THESE TABLES WERE SELECTED FROM THE HIGHER OF SEA OR SWELL WHEN BOTH WERE REPORTED

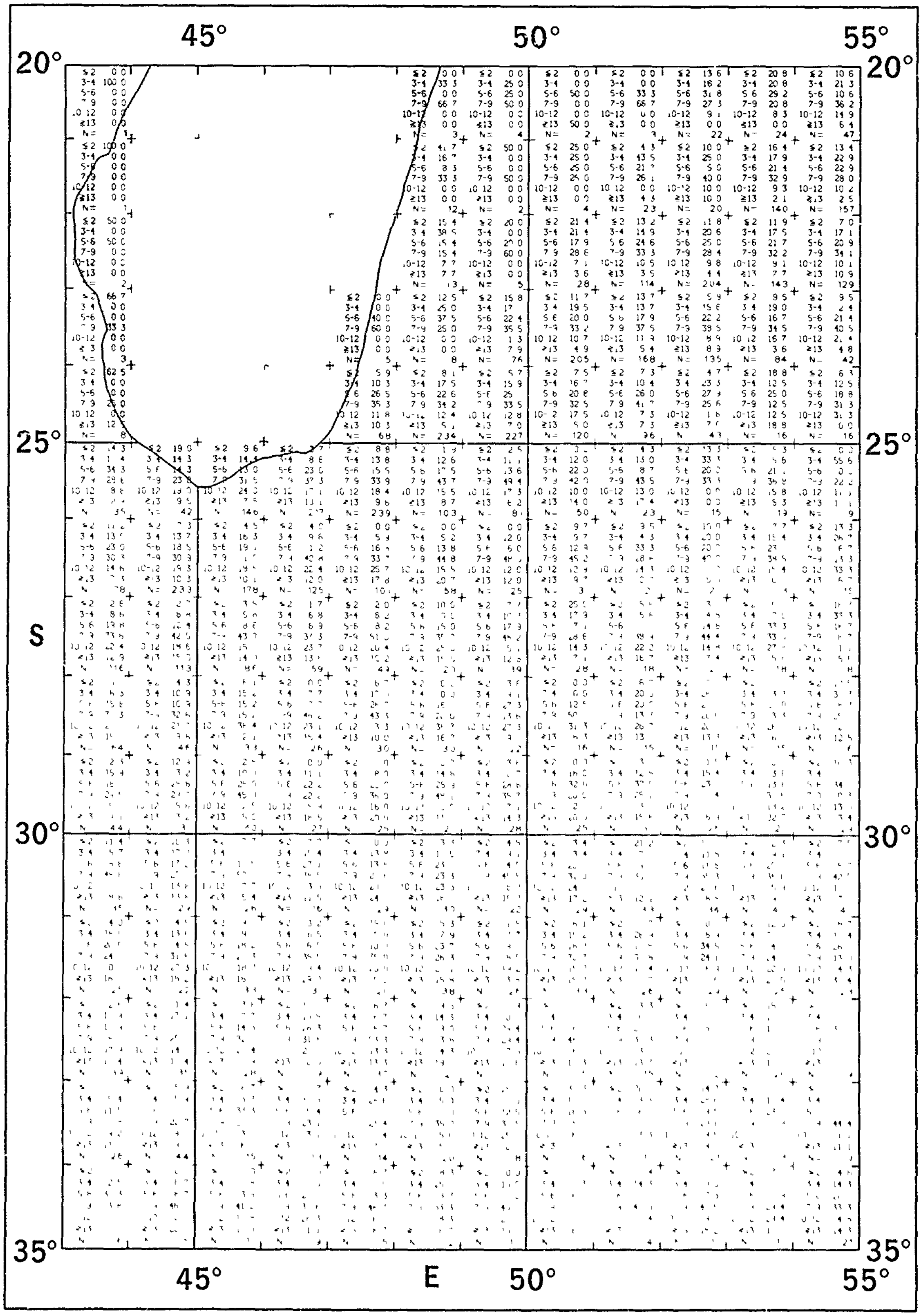
October

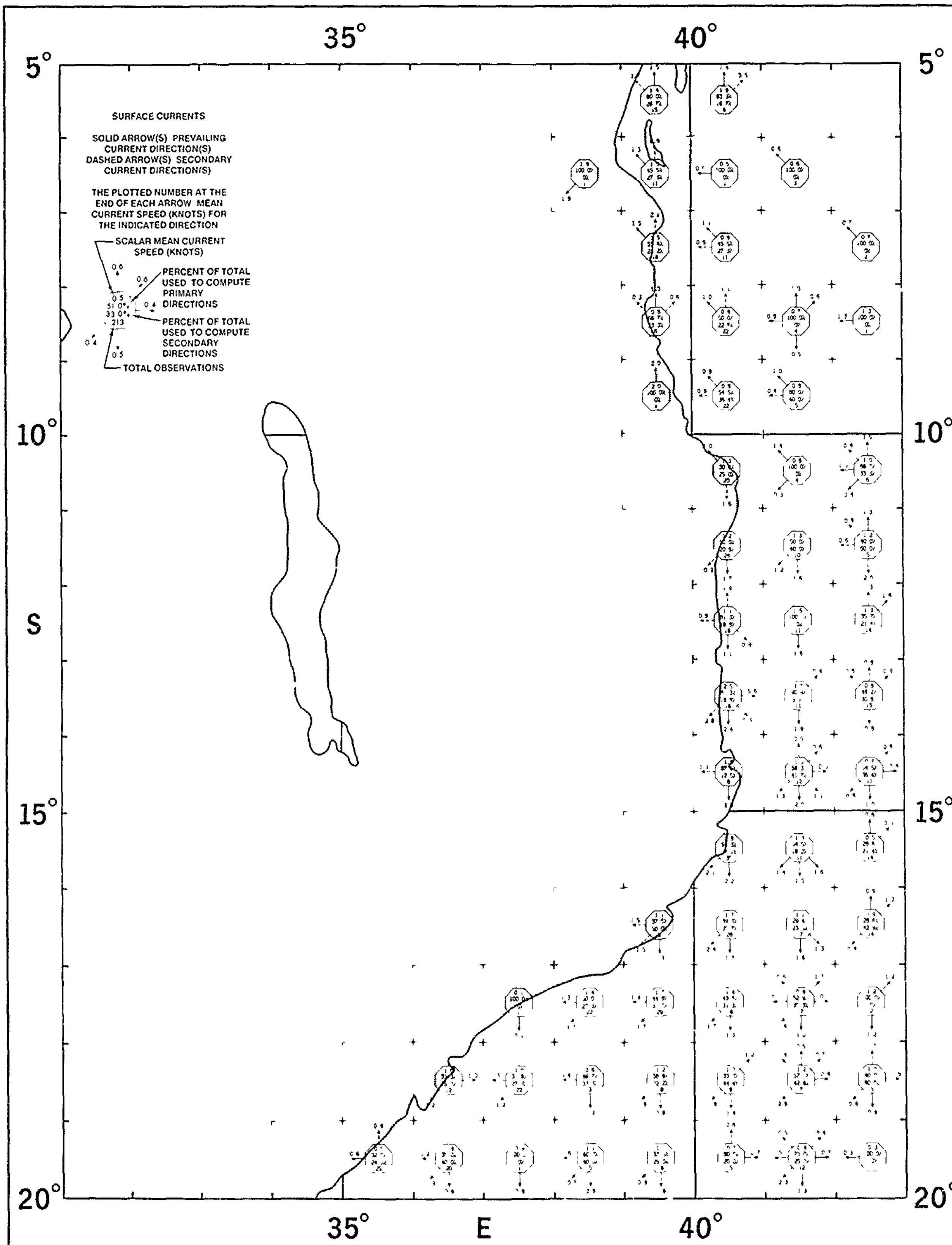
Wave Height

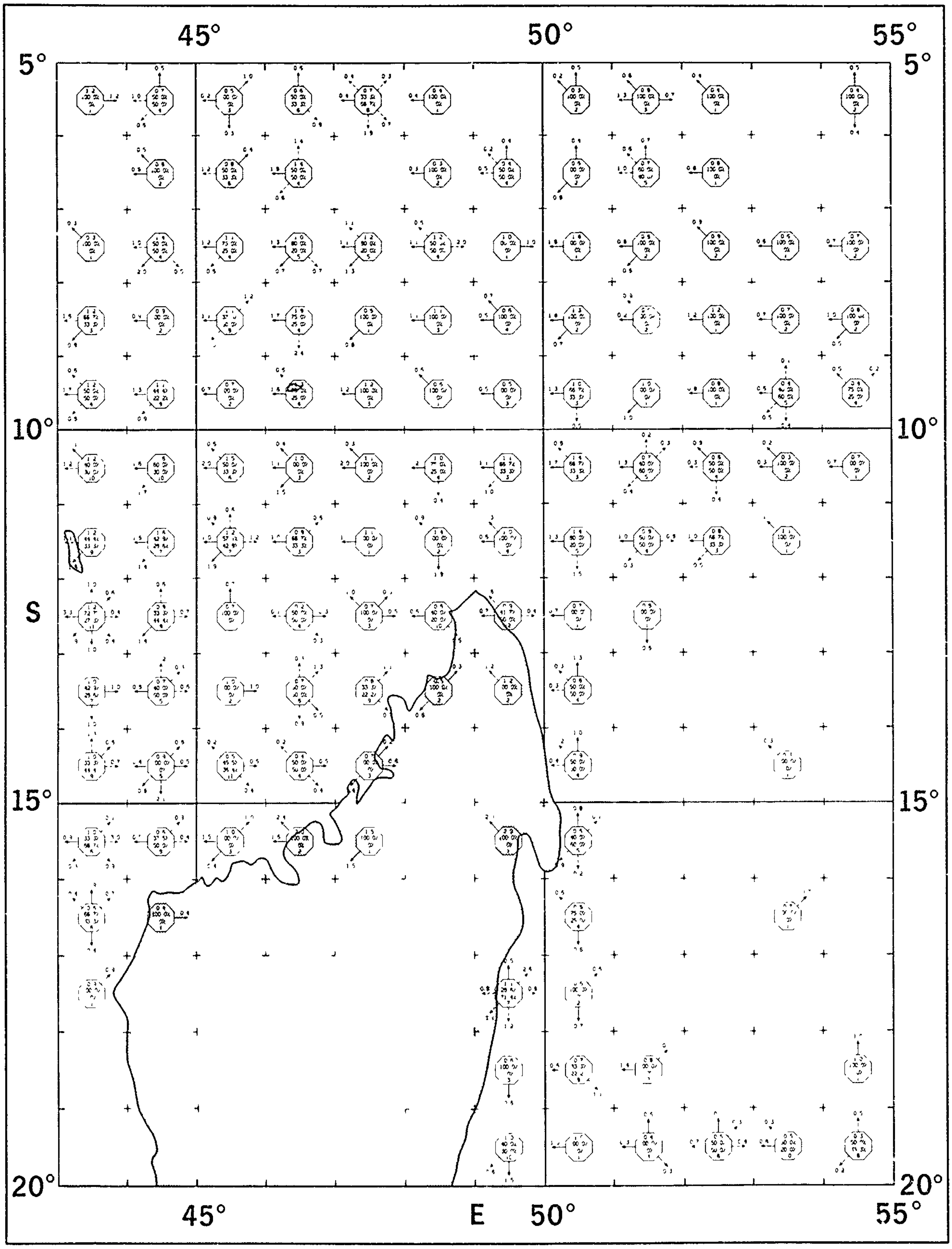


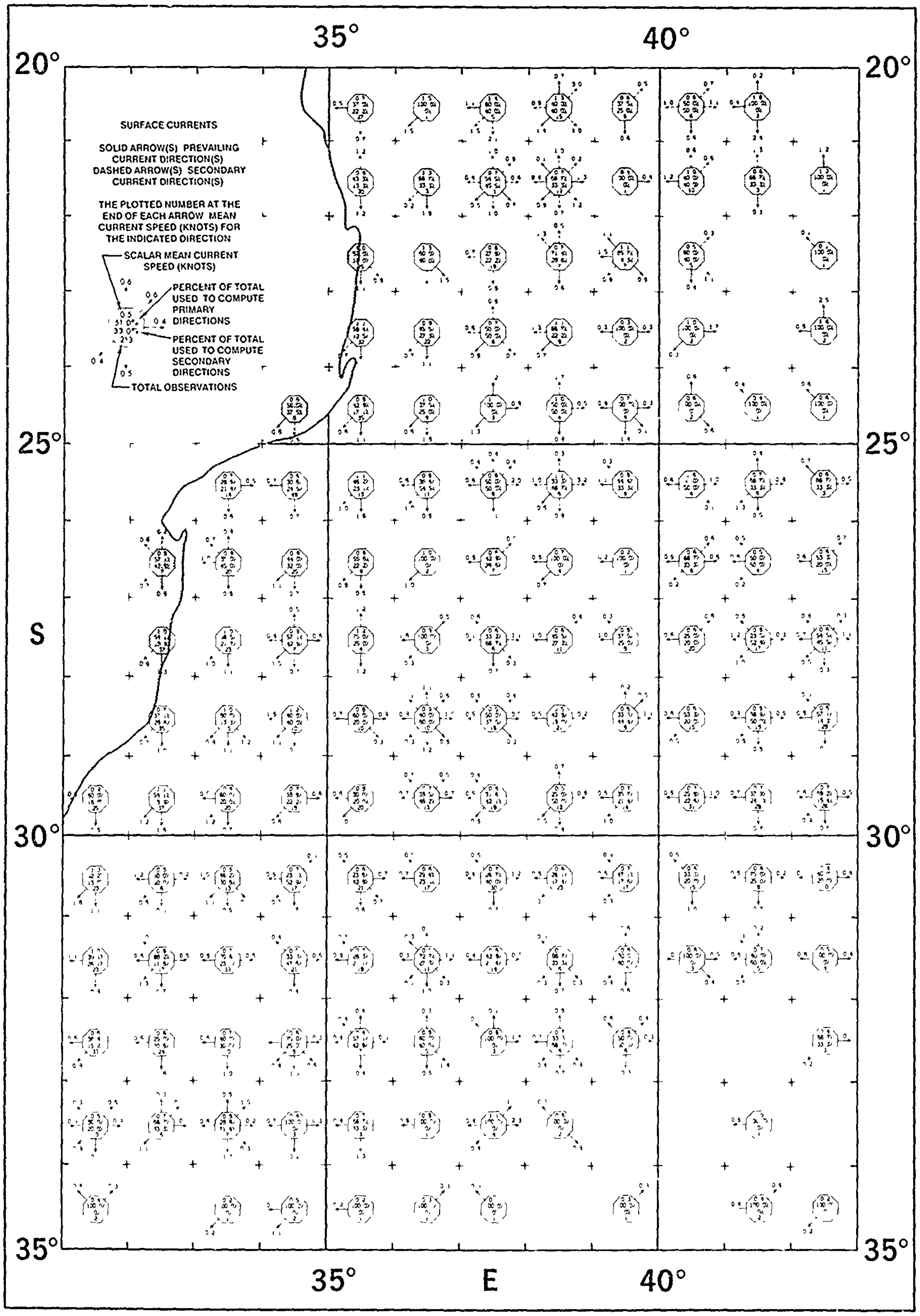

35°
40°
20°
25°
30°
35°
S
E
WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
Height Percent
≤2 10.0
3-4 20.0
5-6 30.0
7-9 20.0
10-12 10.0
≥13 10.0
N = 1363
EXAMPLE 30.0% OF ALL WAVE HEIGHTS WERE IN THE RANGE 5 - 6 FEET
N = OBSERVATION COUNT
WAVE DATA FOR THESE TABLES WERE SELECTED FROM THE HIGHER OF SEA OR SWELL WHEN BOTH WERE REPORTED

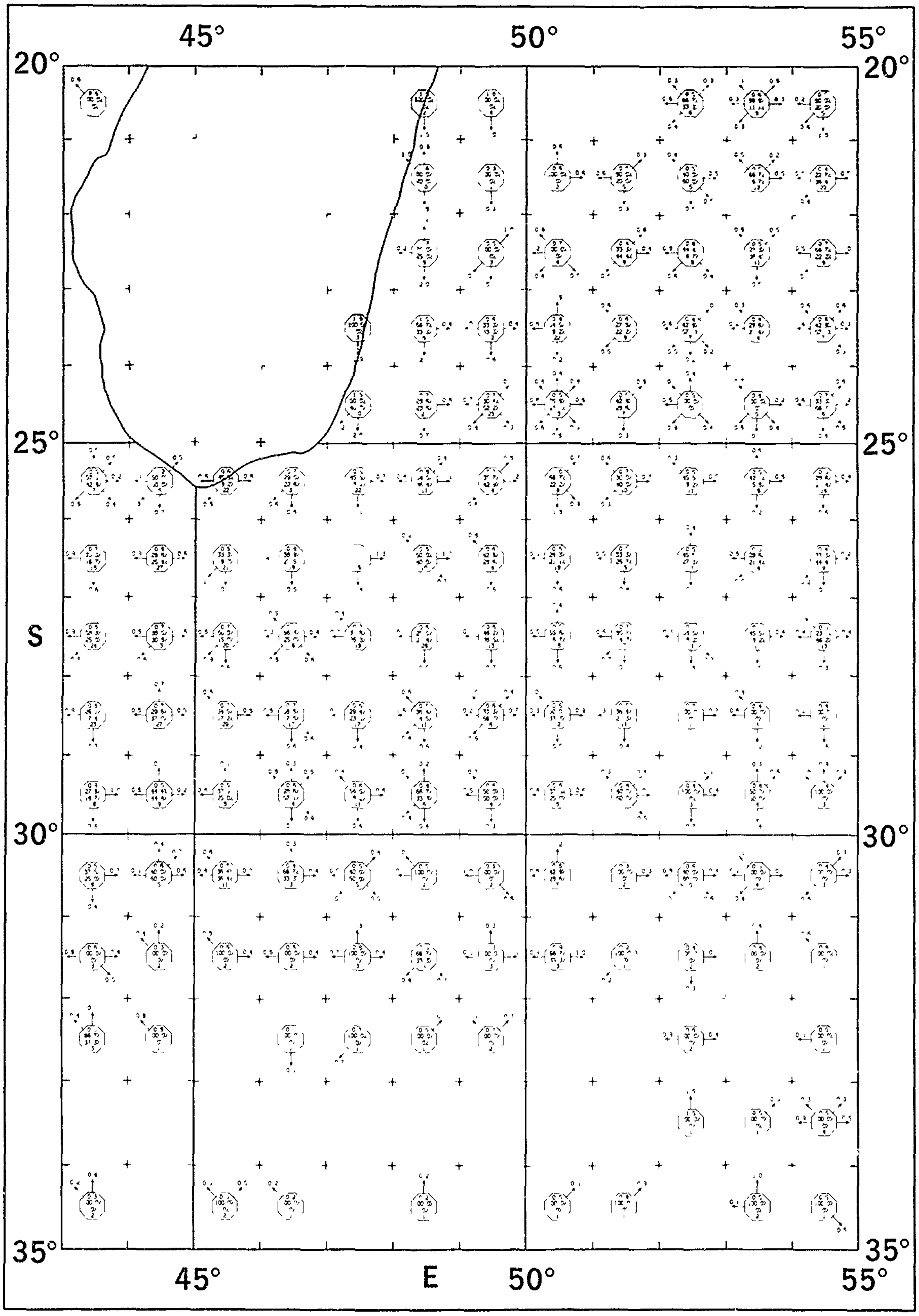
October Wave Height

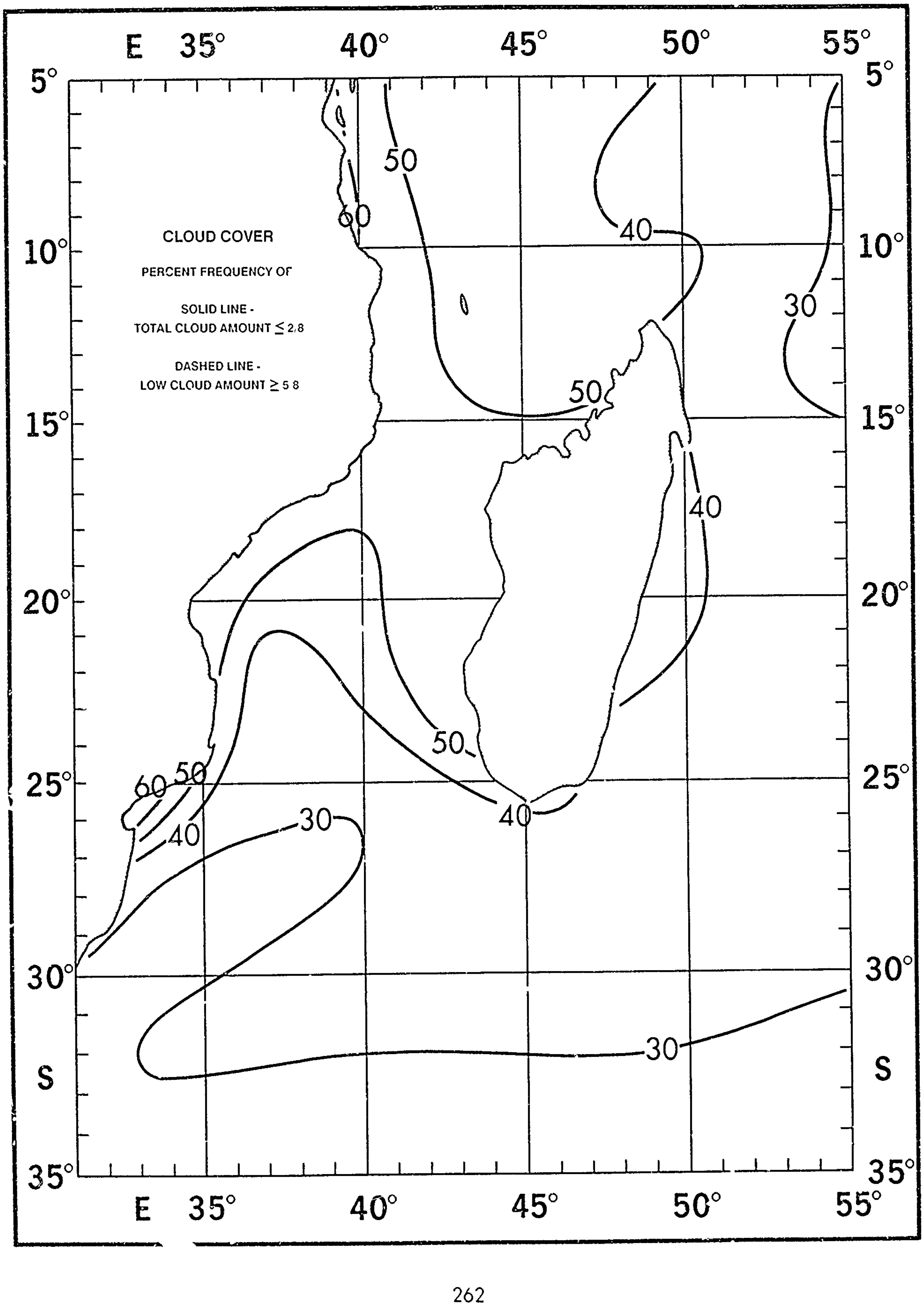



35°
40°
5°
10°
15°
20°
S
E
SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS

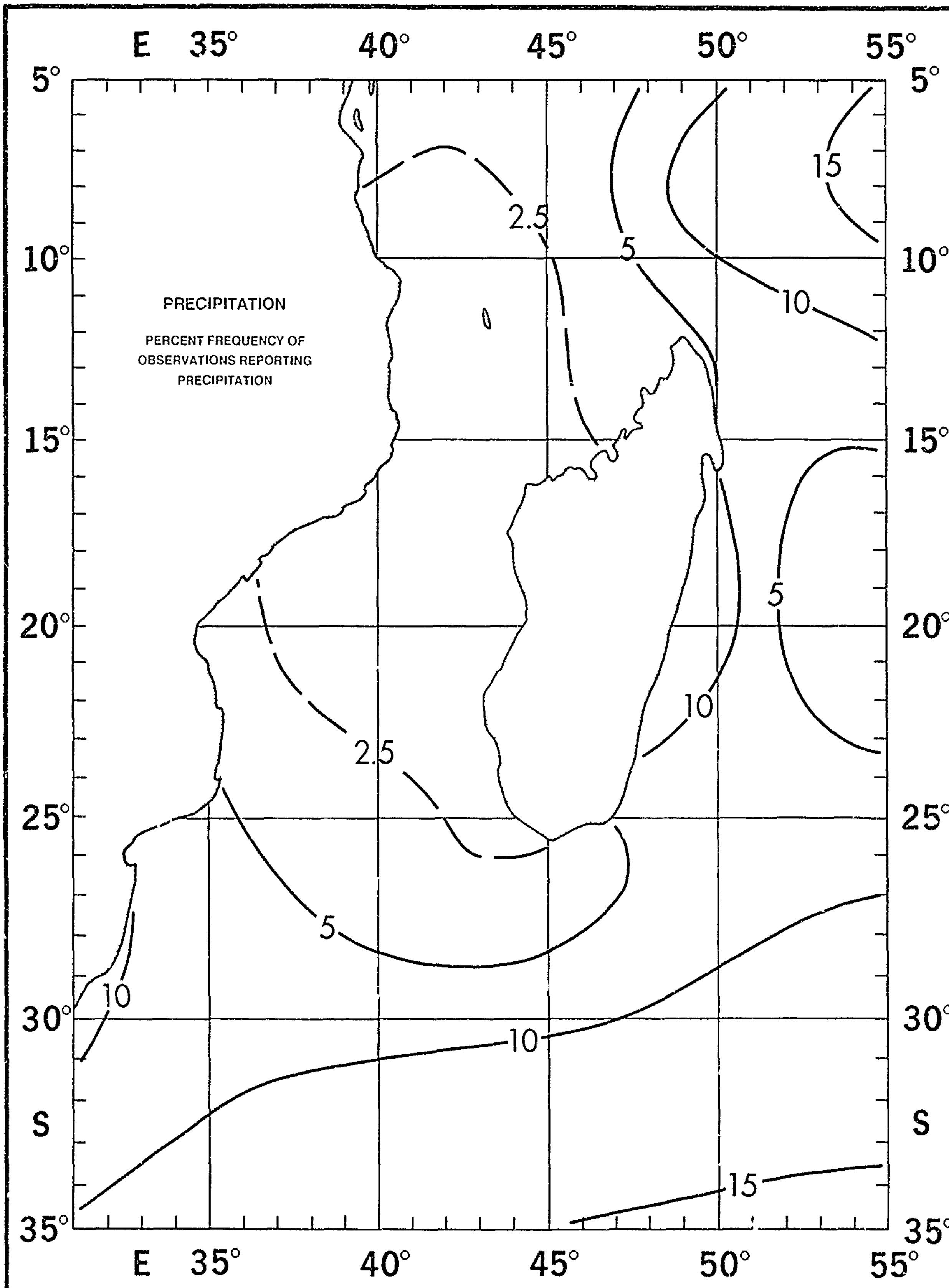

45°
50°
55°
5°
10°
15°
20°
S
E

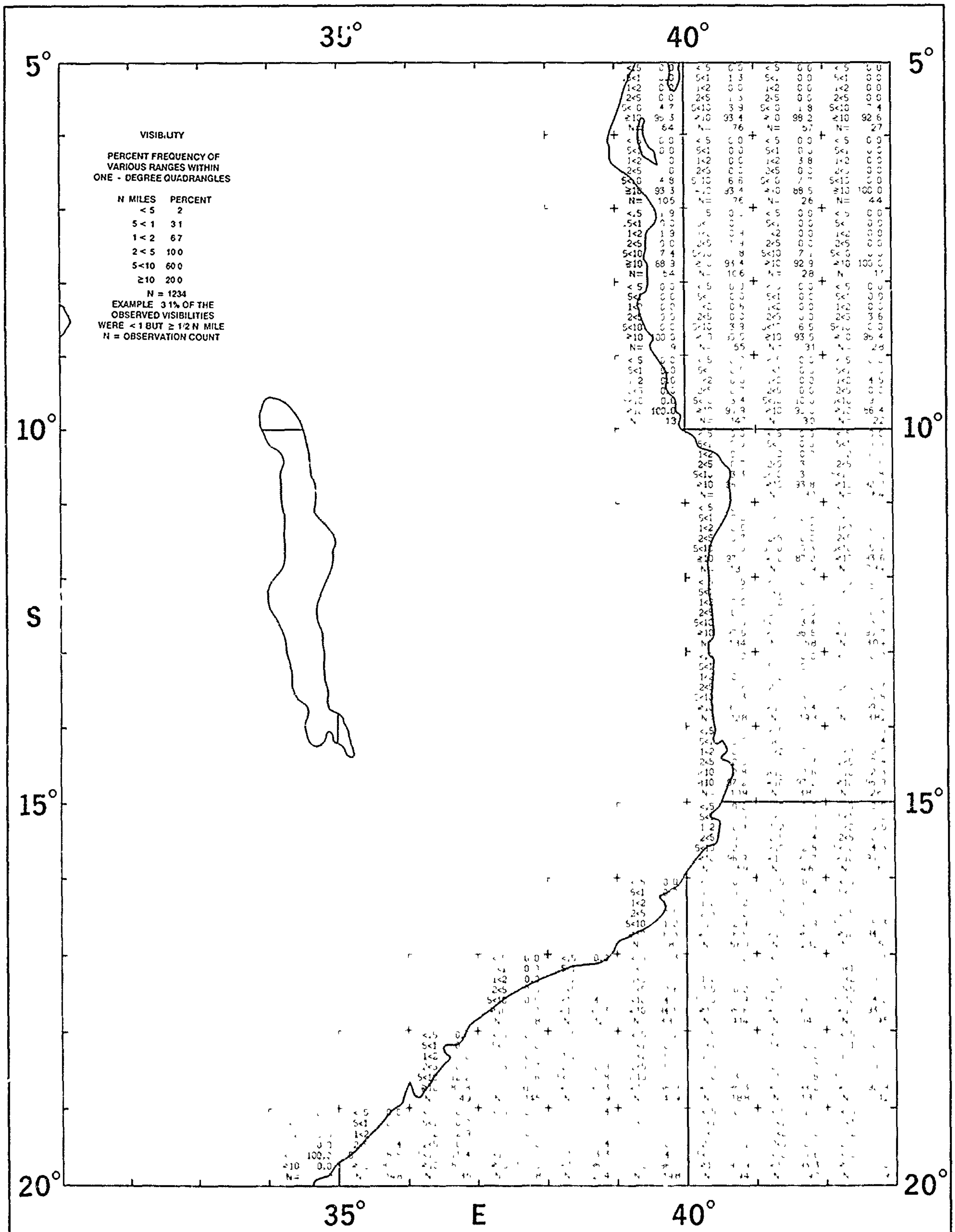

35°
40°
20°
20°
SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS
25°
25°
S
30°
30°
35°
35°
35°
E
40°


45°
50°
55°
20°
25°
30°
35°
S
E

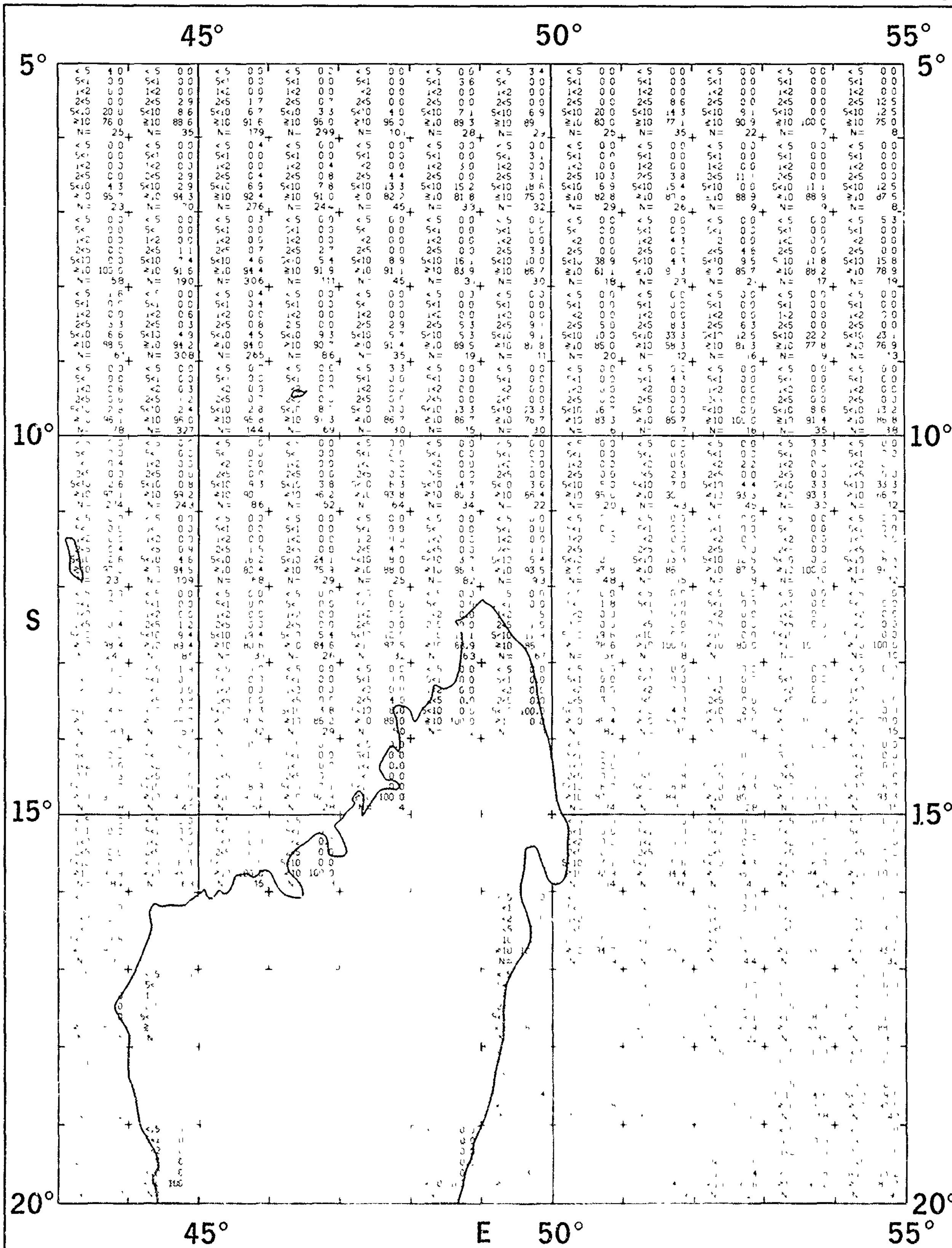


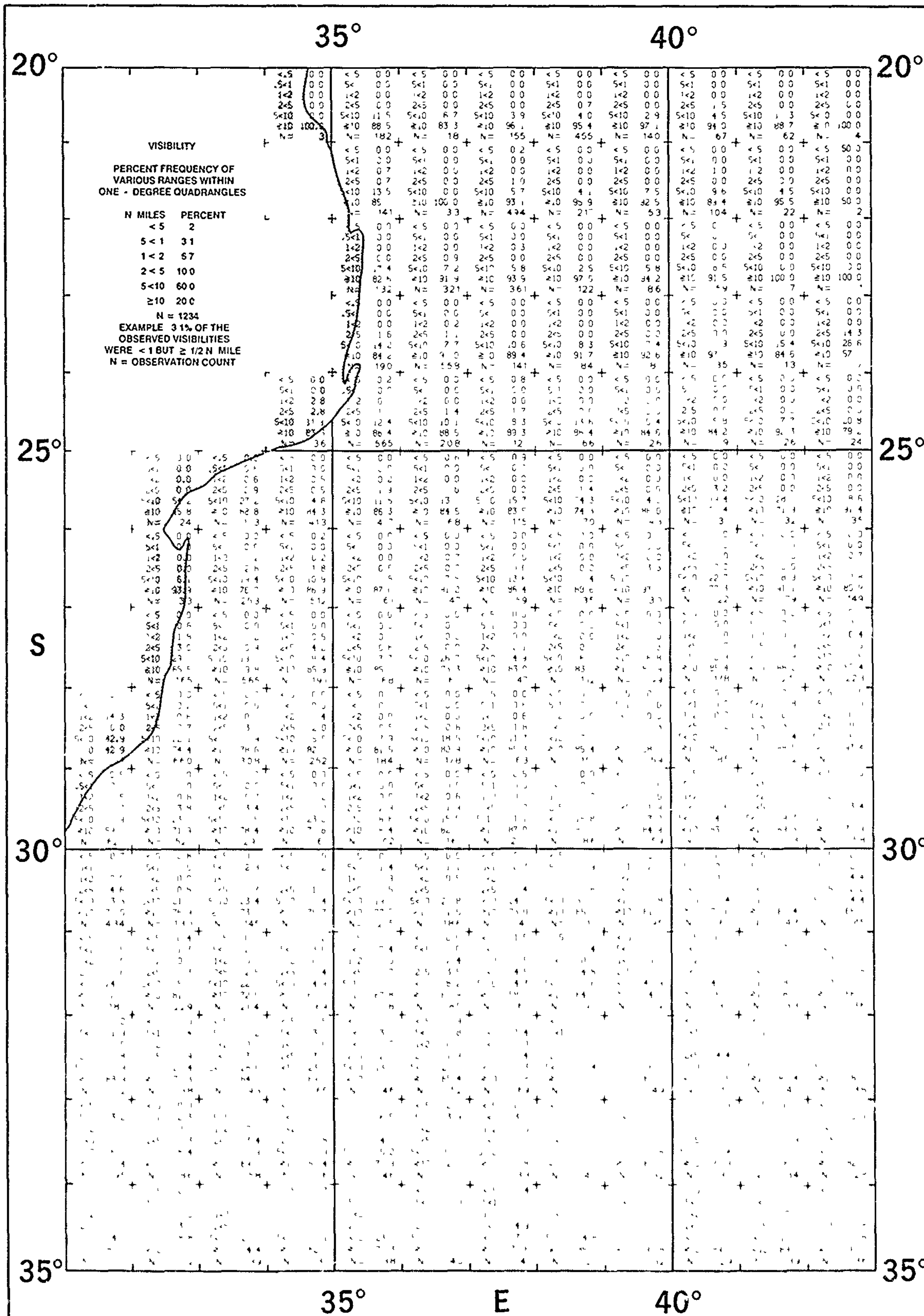
E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
CLOUD COVER
PERCENT FREQUENCY OF
SOLID LINE -
TOTAL CLOUD AMOUNT ≤ 2/8
DASHED LINE -
LOW CLOUD AMOUNT ≥ 5/8
60
50
40
30


E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
PRECIPITATION
PERCENT FREQUENCY OF OBSERVATIONS REPORTING PRECIPITATION
2.5
5
10
15
2.5
5
10
5
10
10
15


VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
< 5 2
5 < 1 3 1
1 < 2 6 7
2 < 5 10 0
5<10 60 0
≥10 20 0
N = 1234
EXAMPLE 3 1% OF THE OBSERVED VISIBILITIES WERE < 1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT
35°
40°
5°
10°
15°
20°
S
E

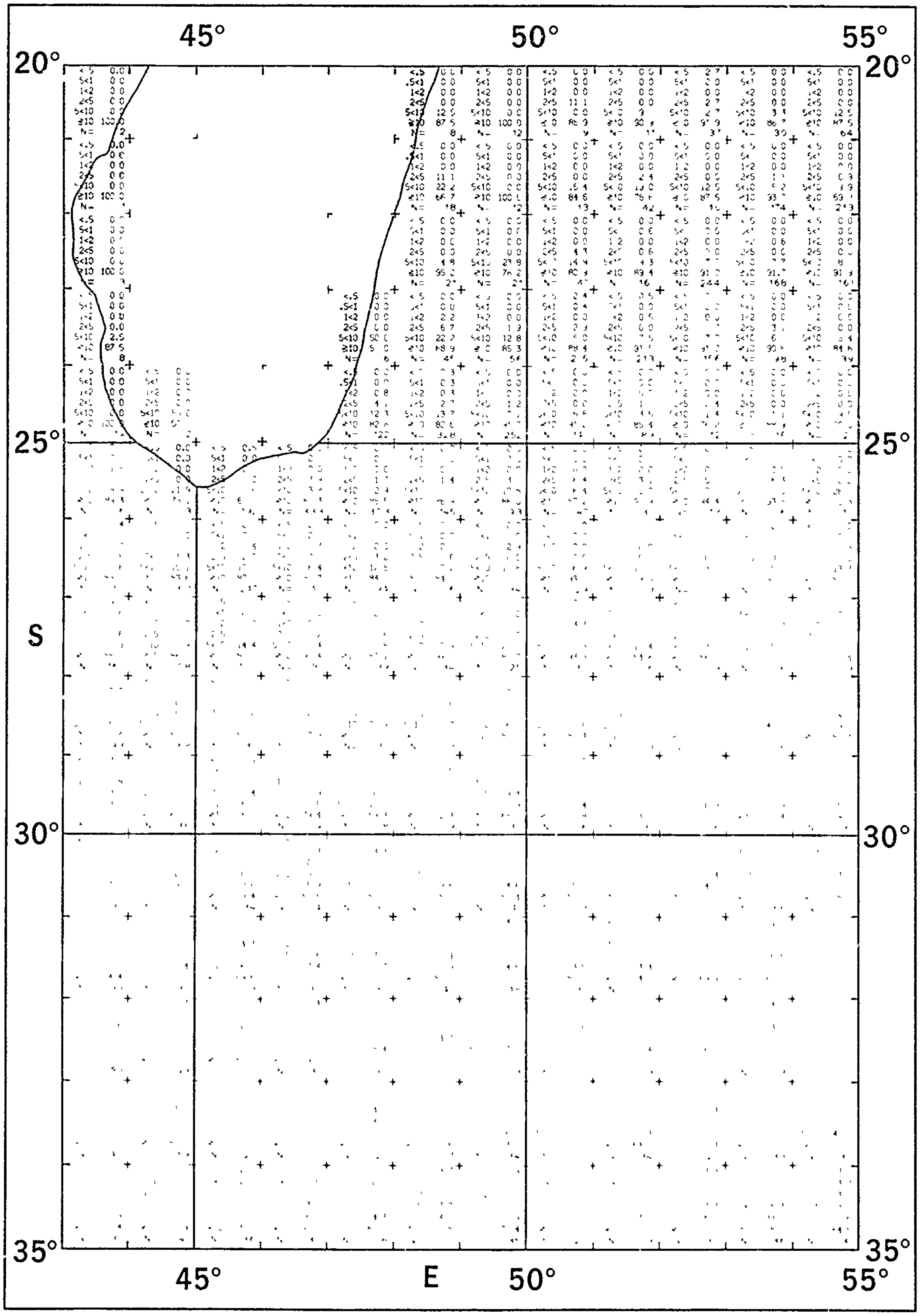
November Visibility

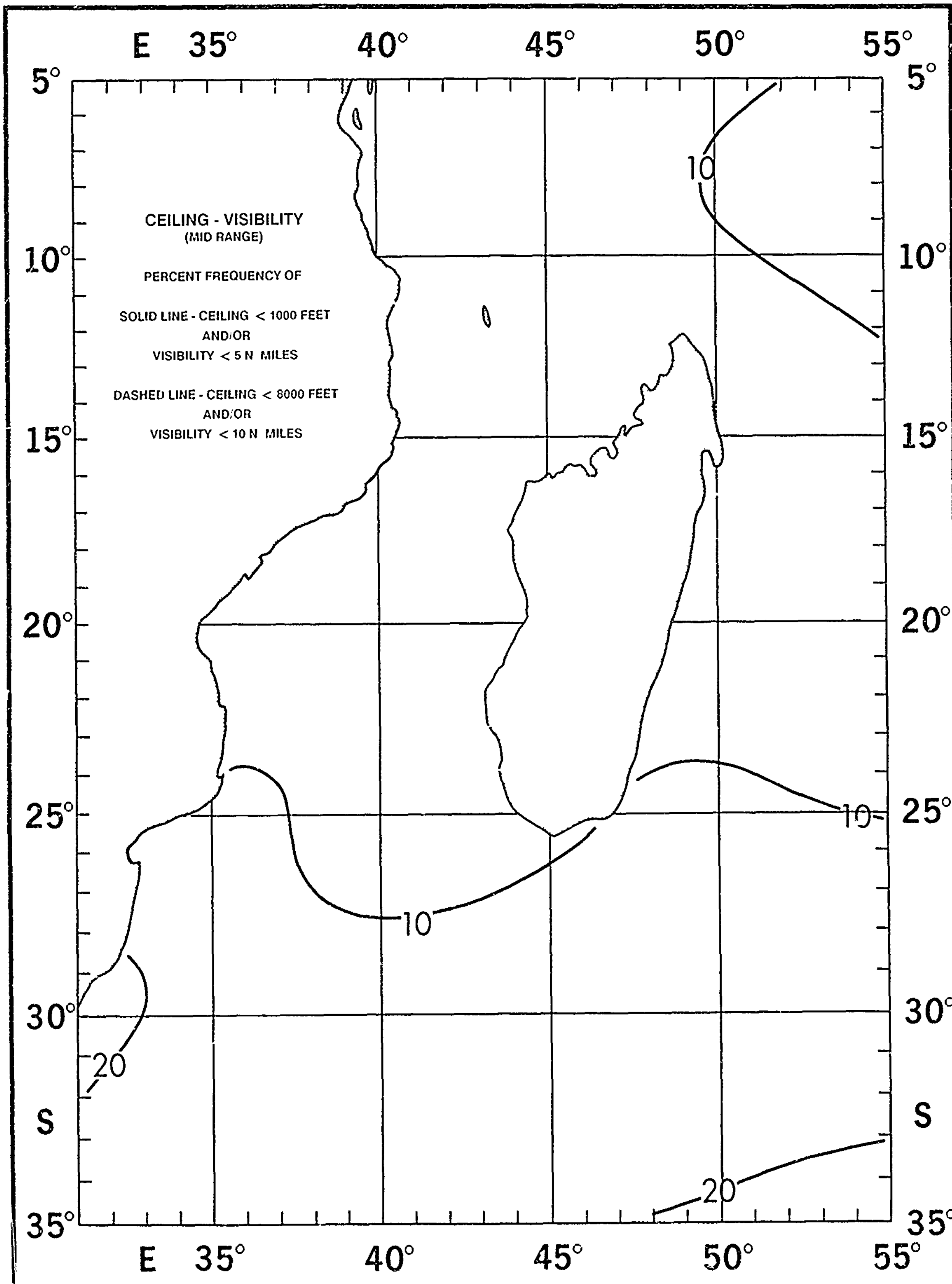


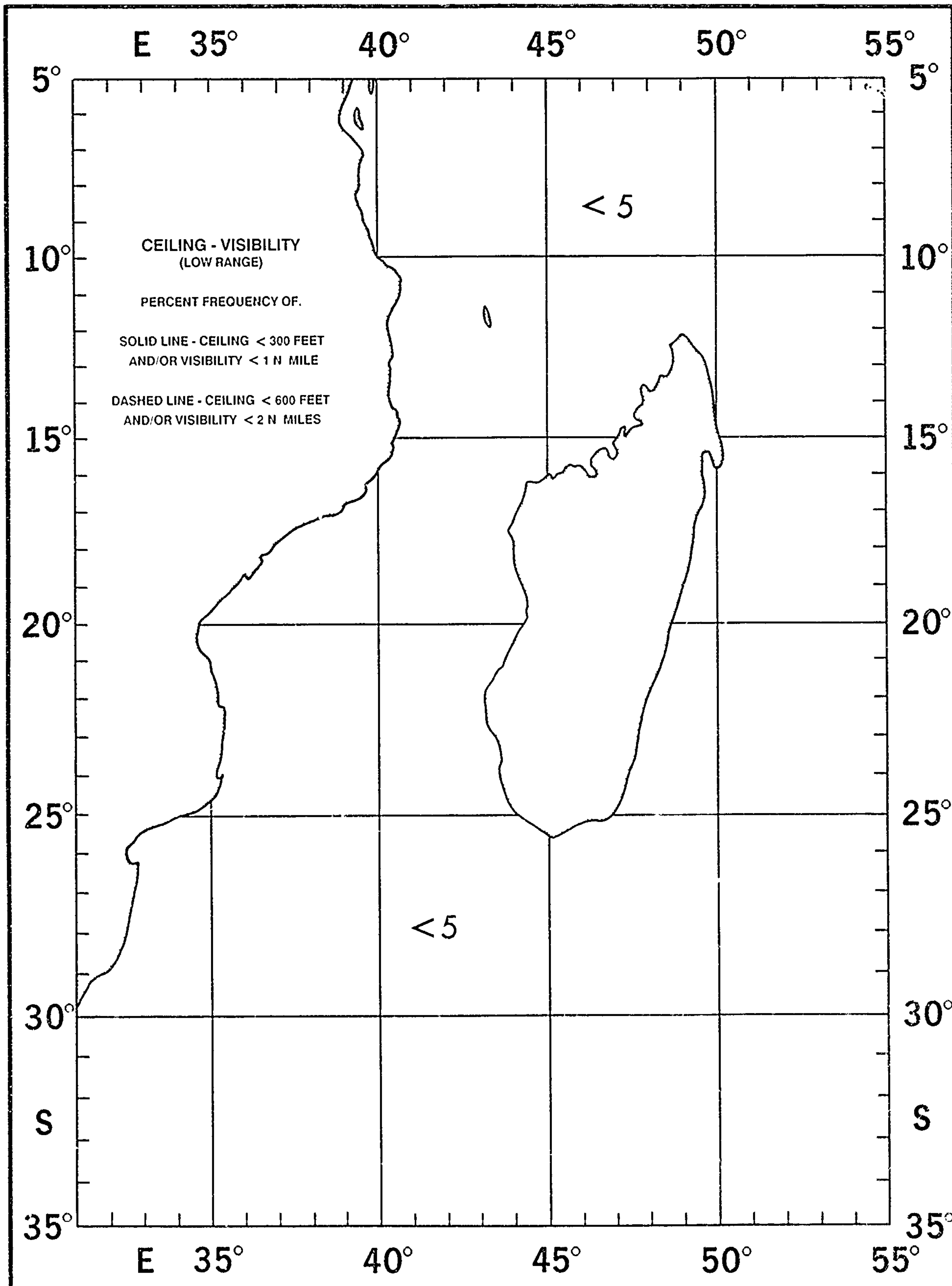

35°
40°
20°
25°
30°
35°
S
E
VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
< 5 2
5 < 1 3 1
1 < 2 6 7
2 < 5 1 0 0
5 < 10 6 0 0
≥ 10 2 0 0
N = 1234
EXAMPLE 3 1% OF THE OBSERVED VISIBILITIES WERE < 1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT

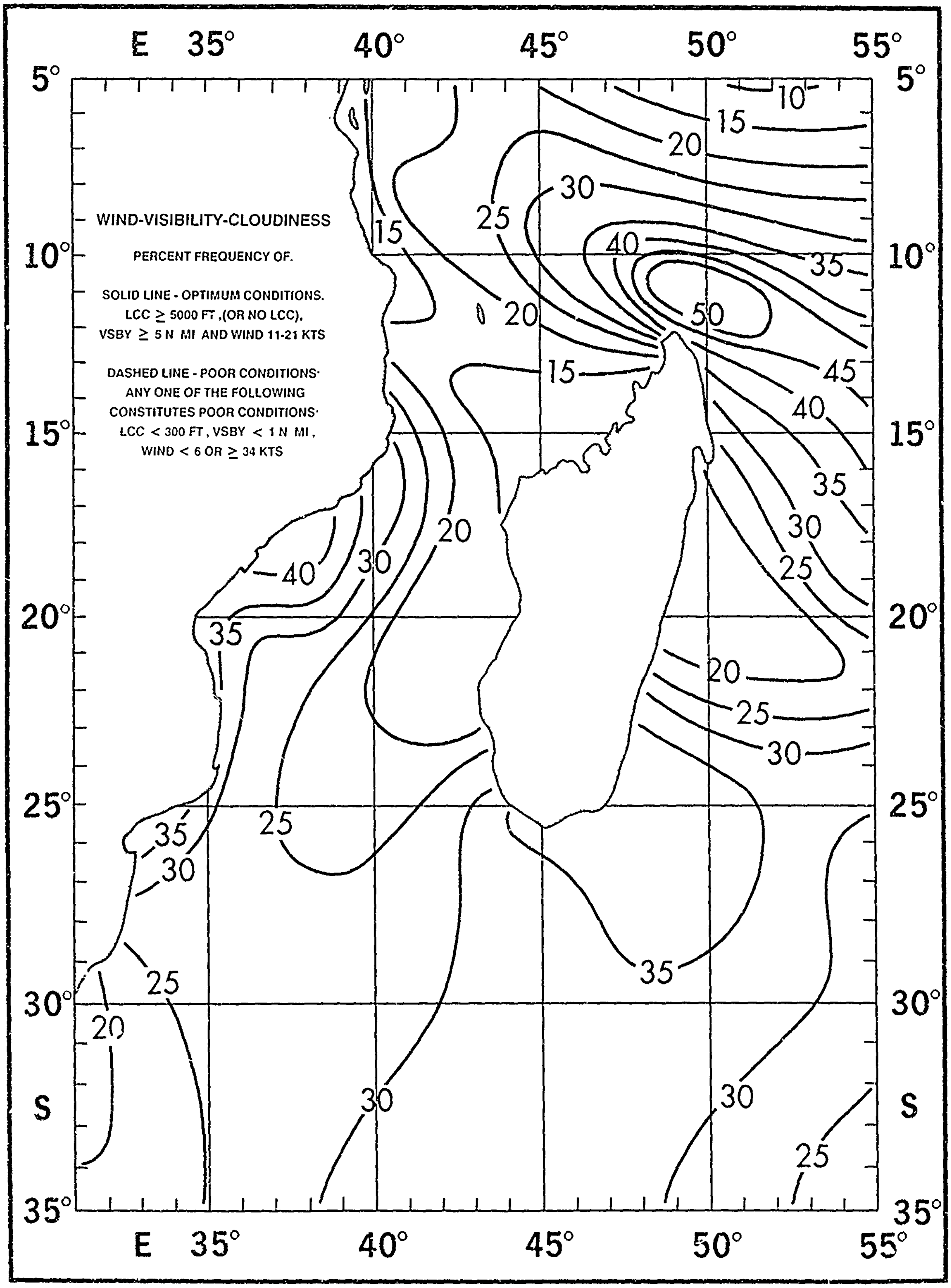
November

Visibility

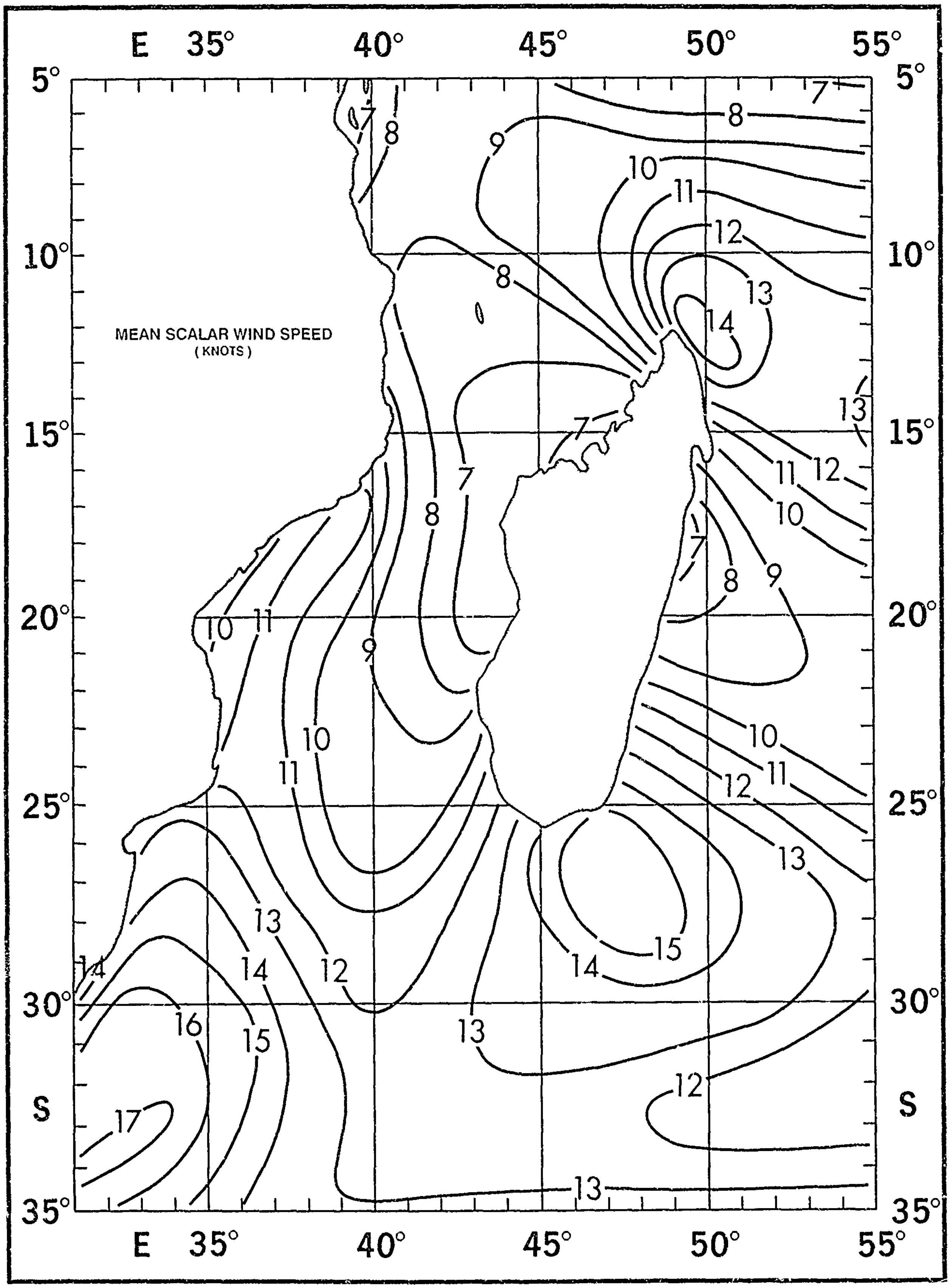



E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
CEILING - VISIBILITY
(MID RANGE)
PERCENT FREQUENCY OF
SOLID LINE - CEILING < 1000 FEET
AND/OR
VISIBILITY < 5 N MILES
DASHED LINE - CEILING < 8000 FEET
AND/OR
VISIBILITY < 10 N MILES
10
10
10
20
20


E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° 35°
S
CEILING - VISIBILITY
(LOW RANGE)
PERCENT FREQUENCY OF.
SOLID LINE - CEILING < 300 FEET
AND/OR VISIBILITY < 1 N MILE
DASHED LINE - CEILING < 600 FEET
AND/OR VISIBILITY < 2 N MILES
< 5
< 5

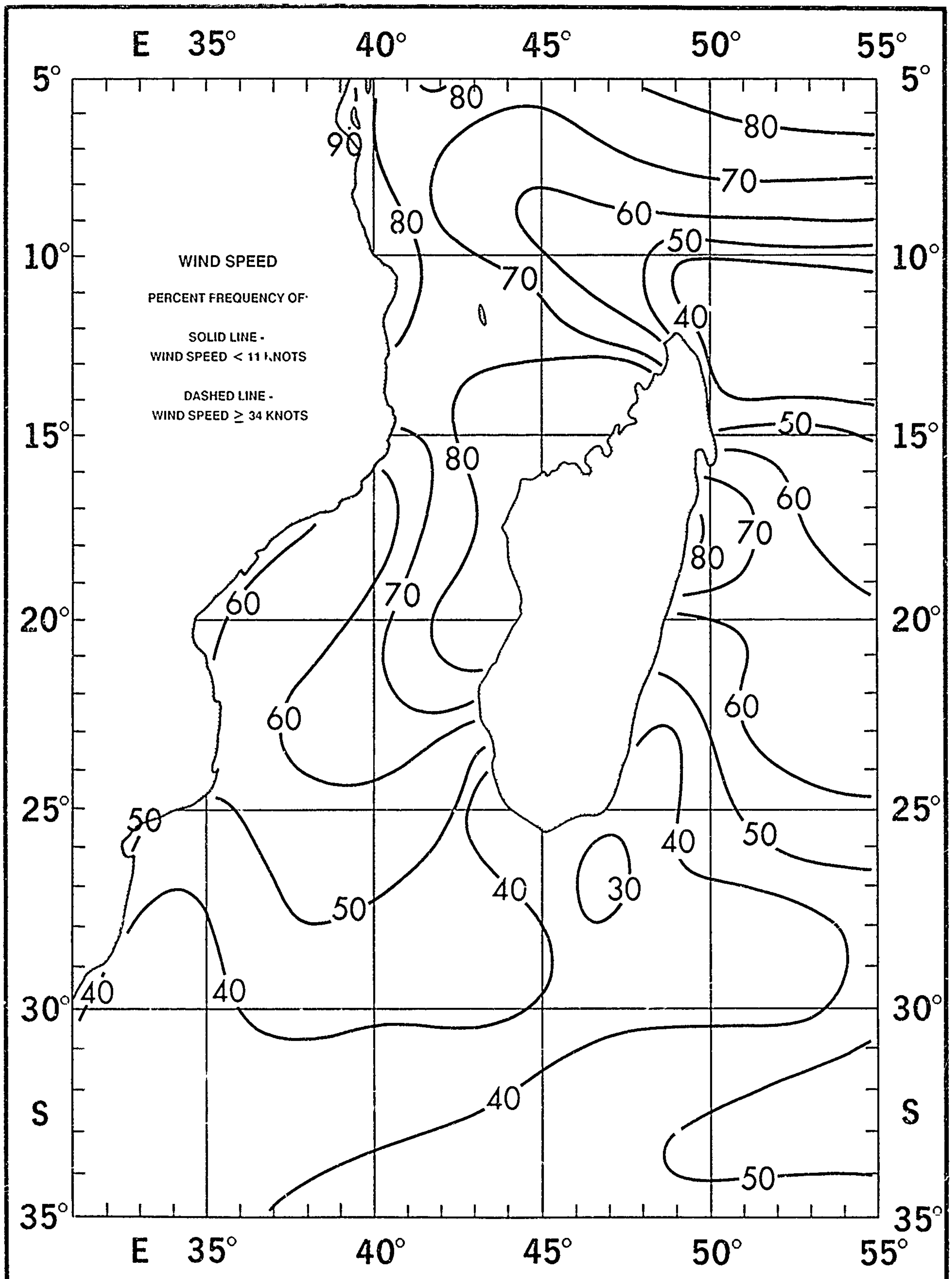


WIND-VISIBILITY-CLOUDINESS
PERCENT FREQUENCY OF.
SOLID LINE - OPTIMUM CONDITIONS.
LCC ≥ 5000 FT ,(OR NO LCC),
VSBY ≥ 5 N MI AND WIND 11-21 KTS
DASHED LINE - POOR CONDITIONS·
ANY ONE OF THE FOLLOWING
CONSTITUTES POOR CONDITIONS·
LCC < 300 FT , VSBY < 1 N MI ,
WIND < 6 OR ≥ 34 KTS
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
10 15 20 25 30 35 40 45 50

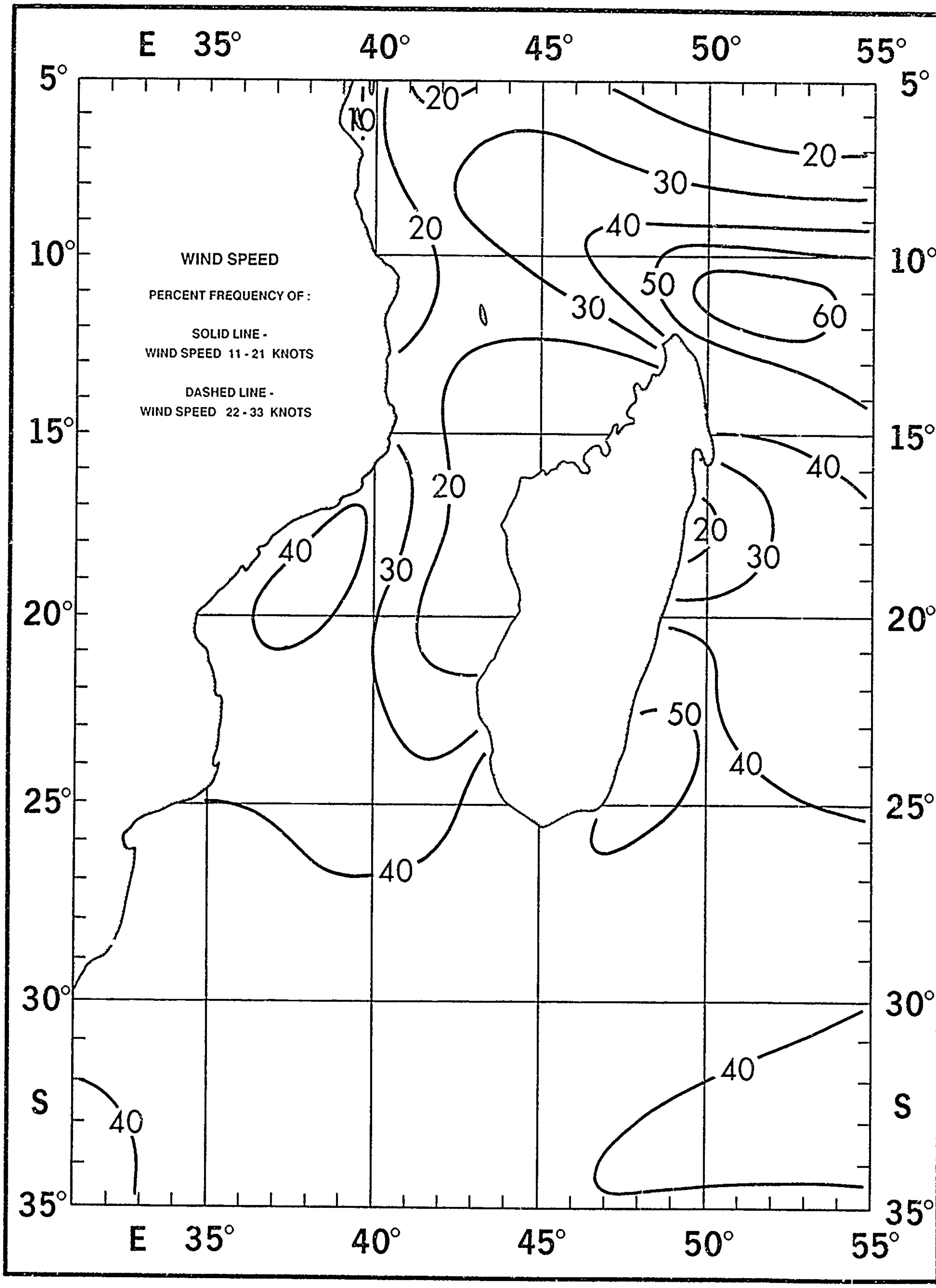

MEAN SCALAR WIND SPEED
(KNOTS)
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
7 8 9 10 11 12 13 14 15 16 17

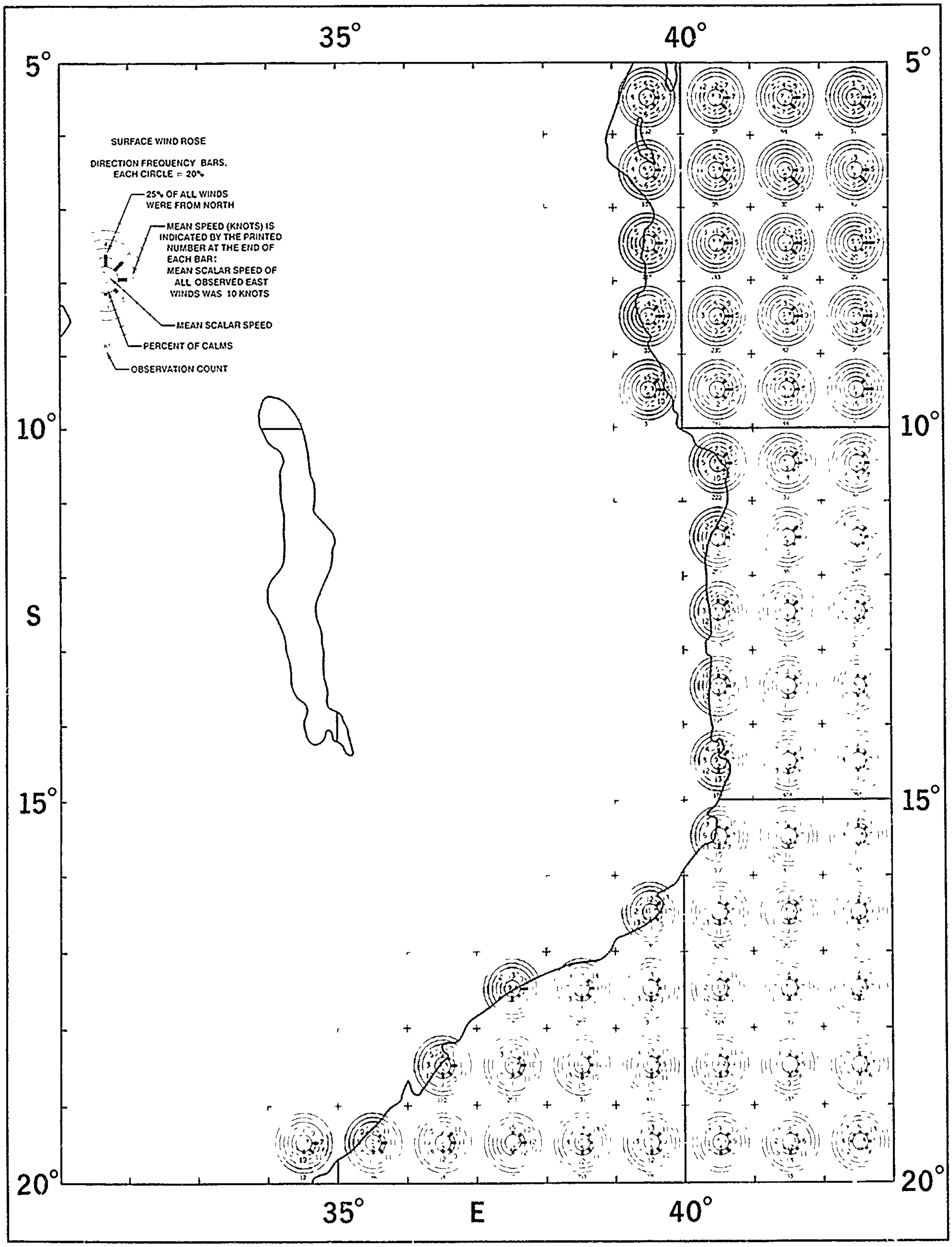
November

Wind Speed <11 and ≥34 Knots

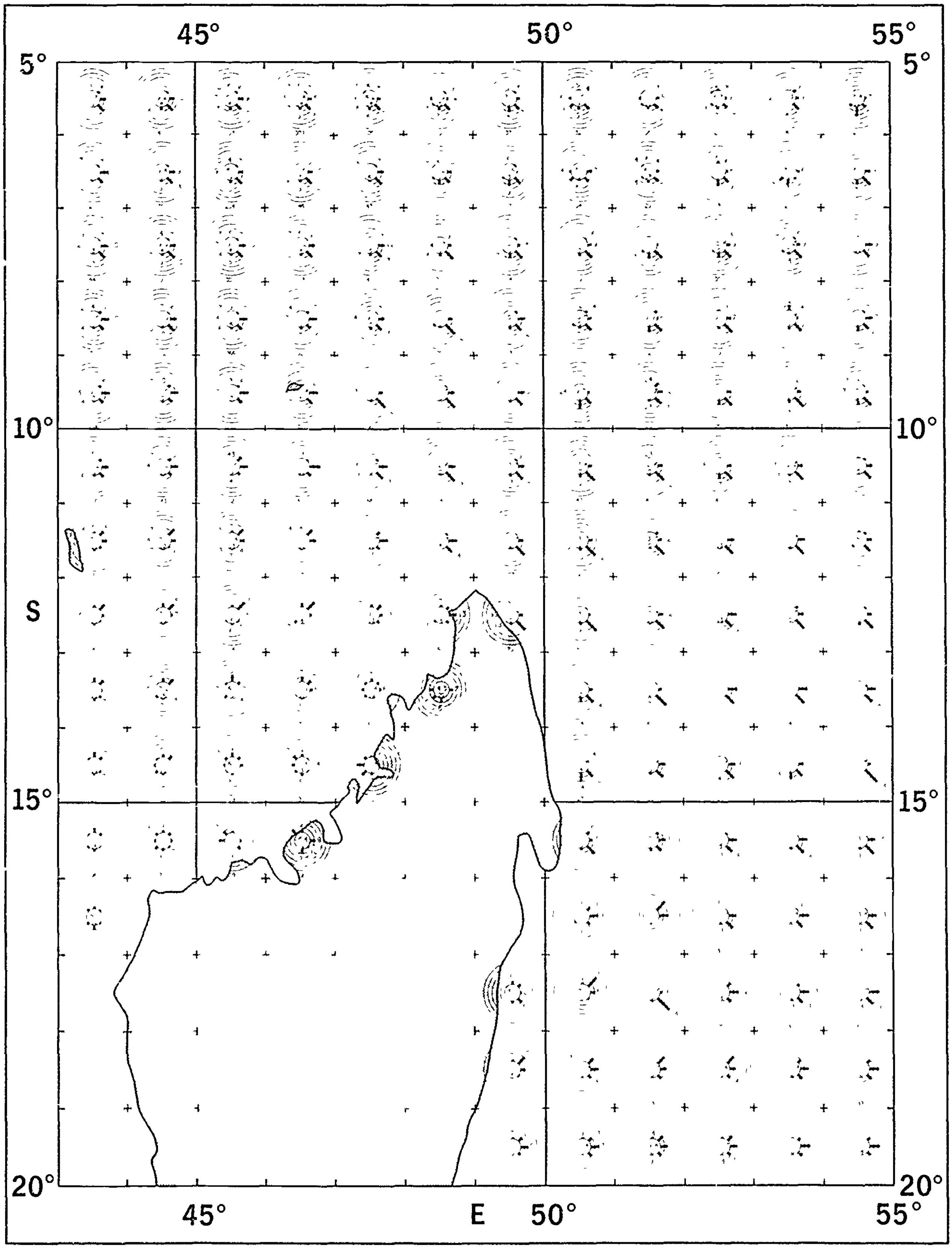


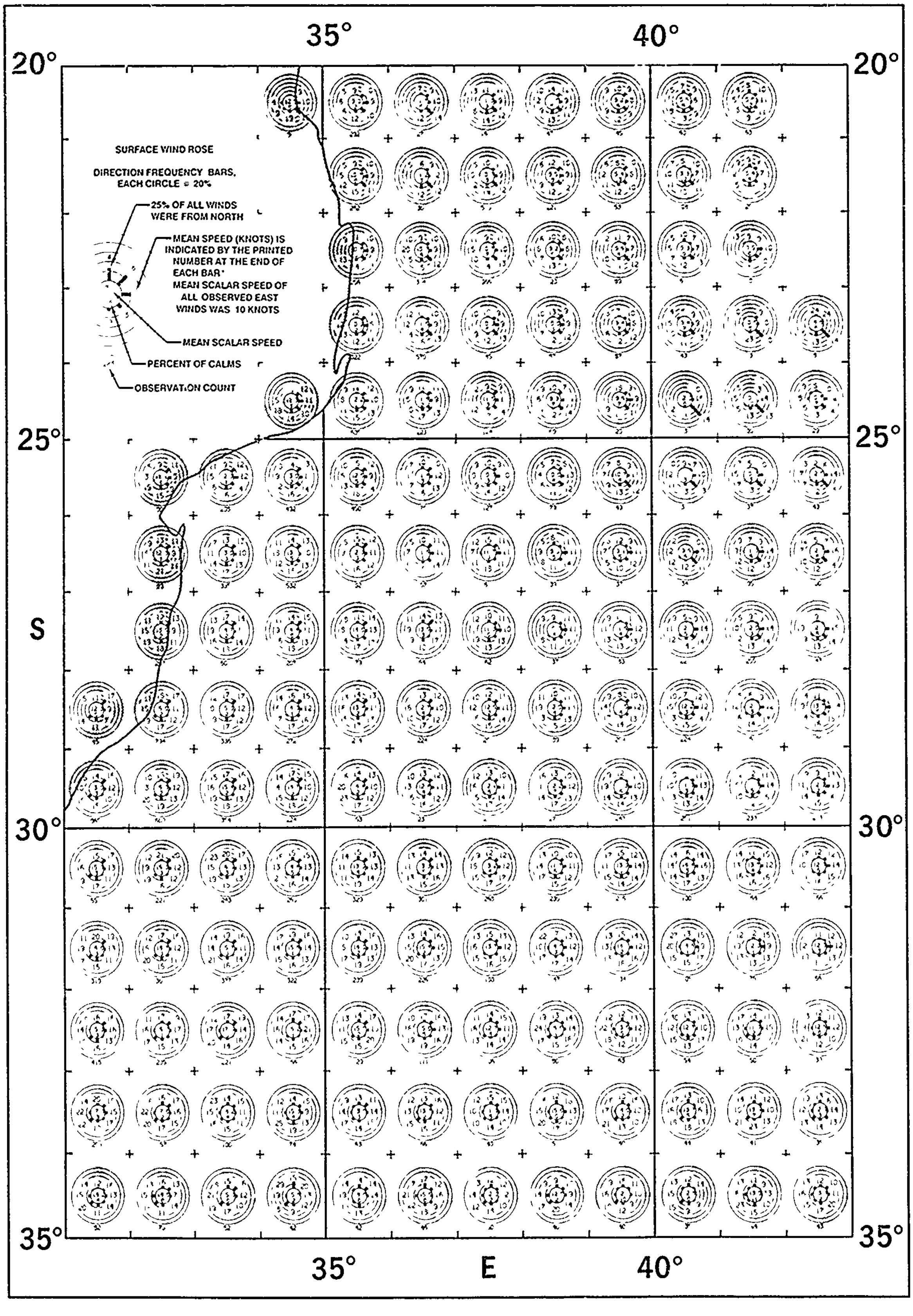
November — Wind Speed 11 - 21 and 22 - 33 Knots

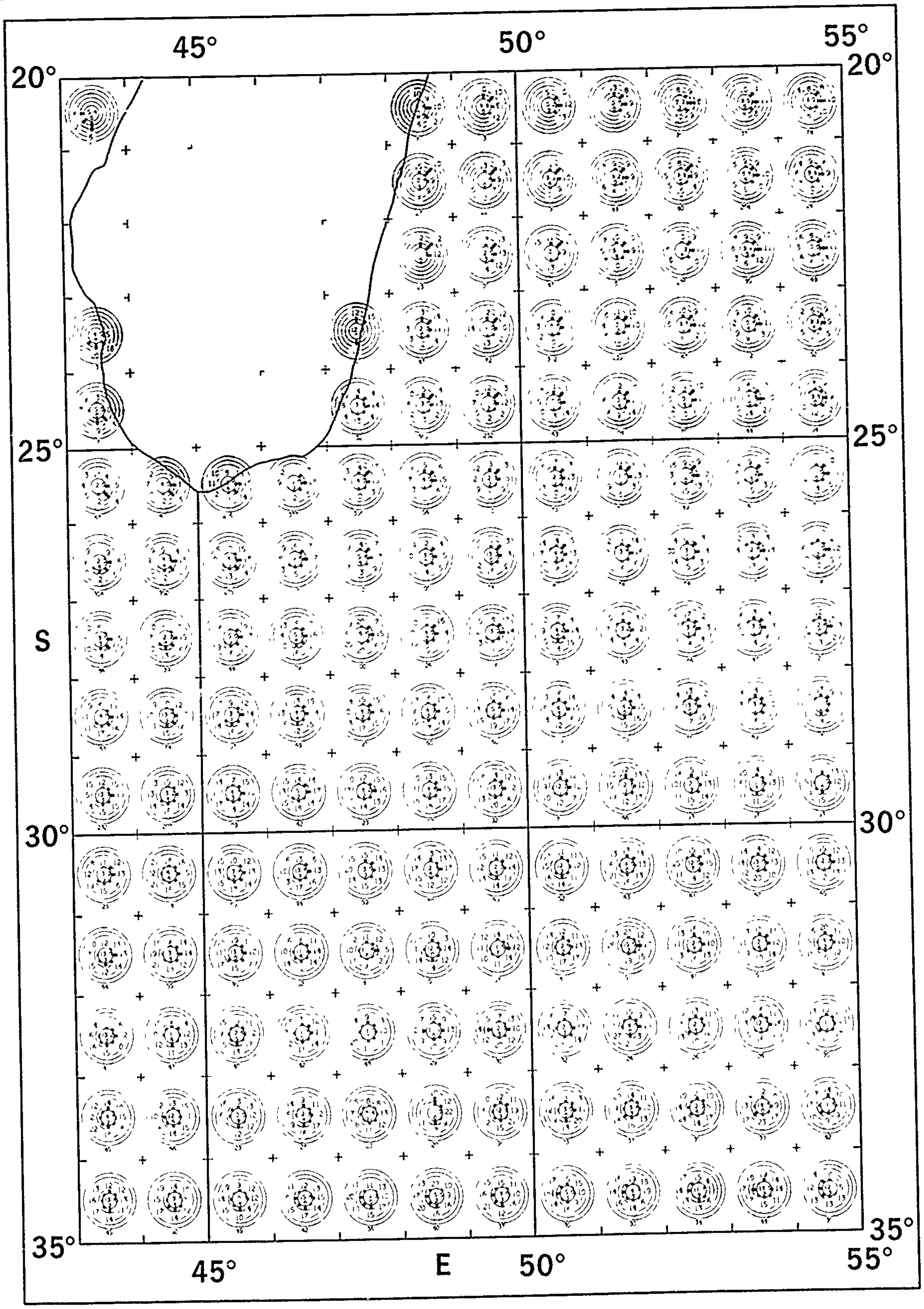


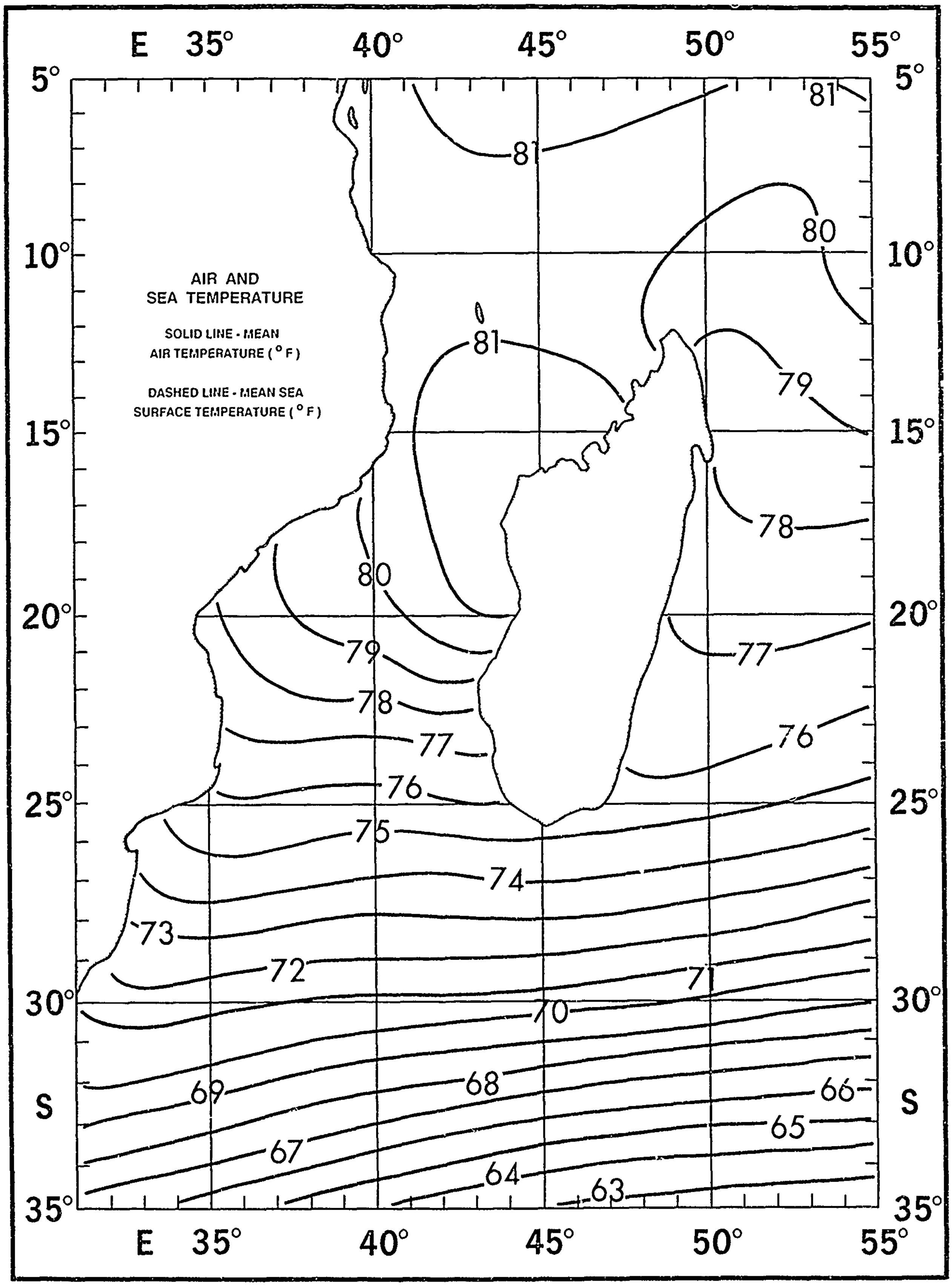

35°
40°
5°
10°
15°
20°
S
E
SURFACE WIND ROSE
DIRECTION FREQUENCY BARS.
EACH CIRCLE = 20%
25% OF ALL WINDS WERE FROM NORTH
MEAN SPEED (KNOTS) IS INDICATED BY THE PRINTED NUMBER AT THE END OF EACH BAR:
MEAN SCALAR SPEED OF ALL OBSERVED EAST WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT

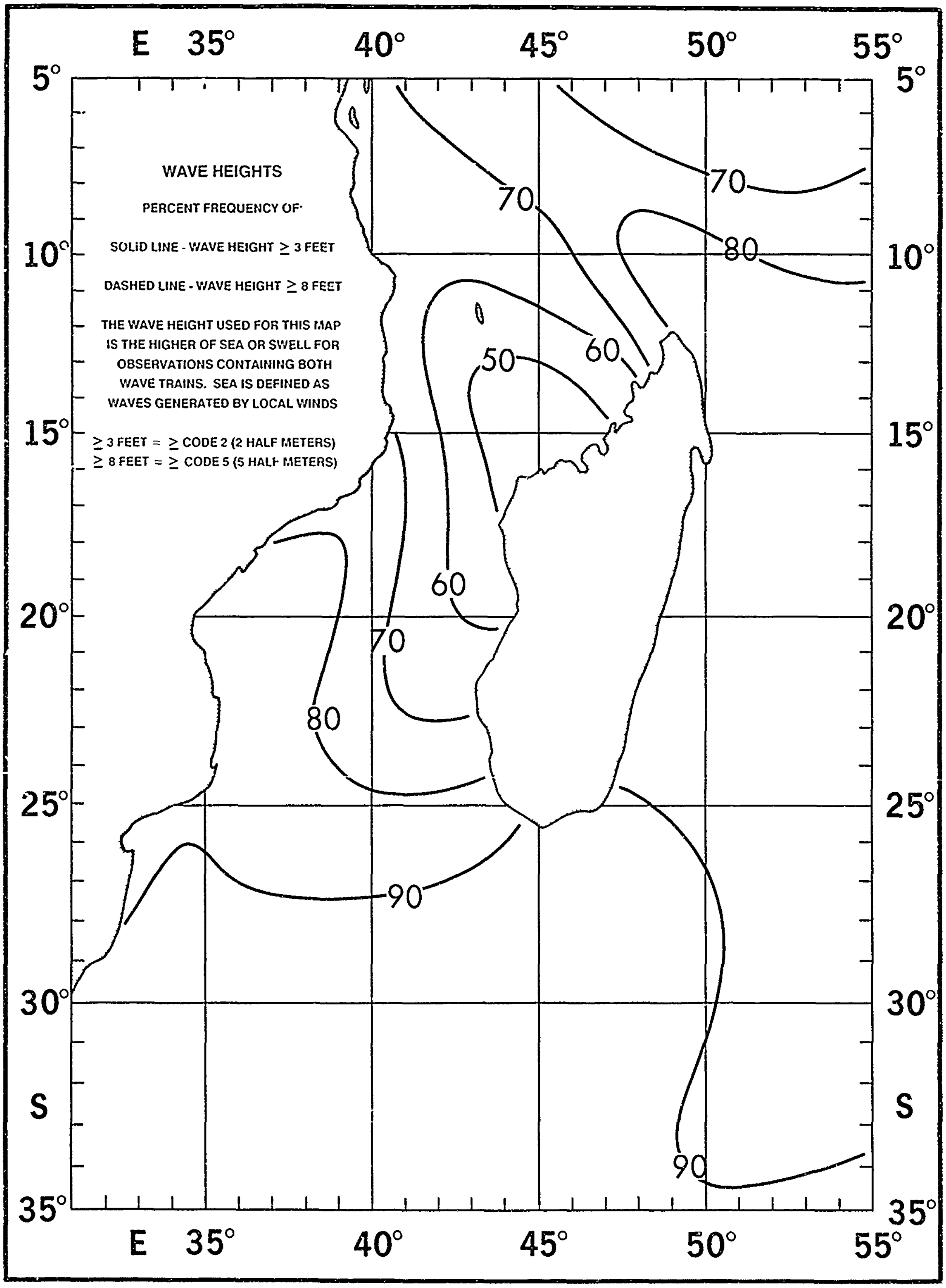
November Surface Wind Roses




35°
40°
20°
20°
SURFACE WIND ROSE
DIRECTION FREQUENCY BARS, EACH CIRCLE = 20%
25% OF ALL WINDS WERE FROM NORTH
MEAN SPEED (KNOTS) IS INDICATED BY THE PRINTED NUMBER AT THE END OF EACH BAR*
MEAN SCALAR SPEED OF ALL OBSERVED EAST WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT
25°
25°
S
30°
30°
35°
35°
35°
E
40°

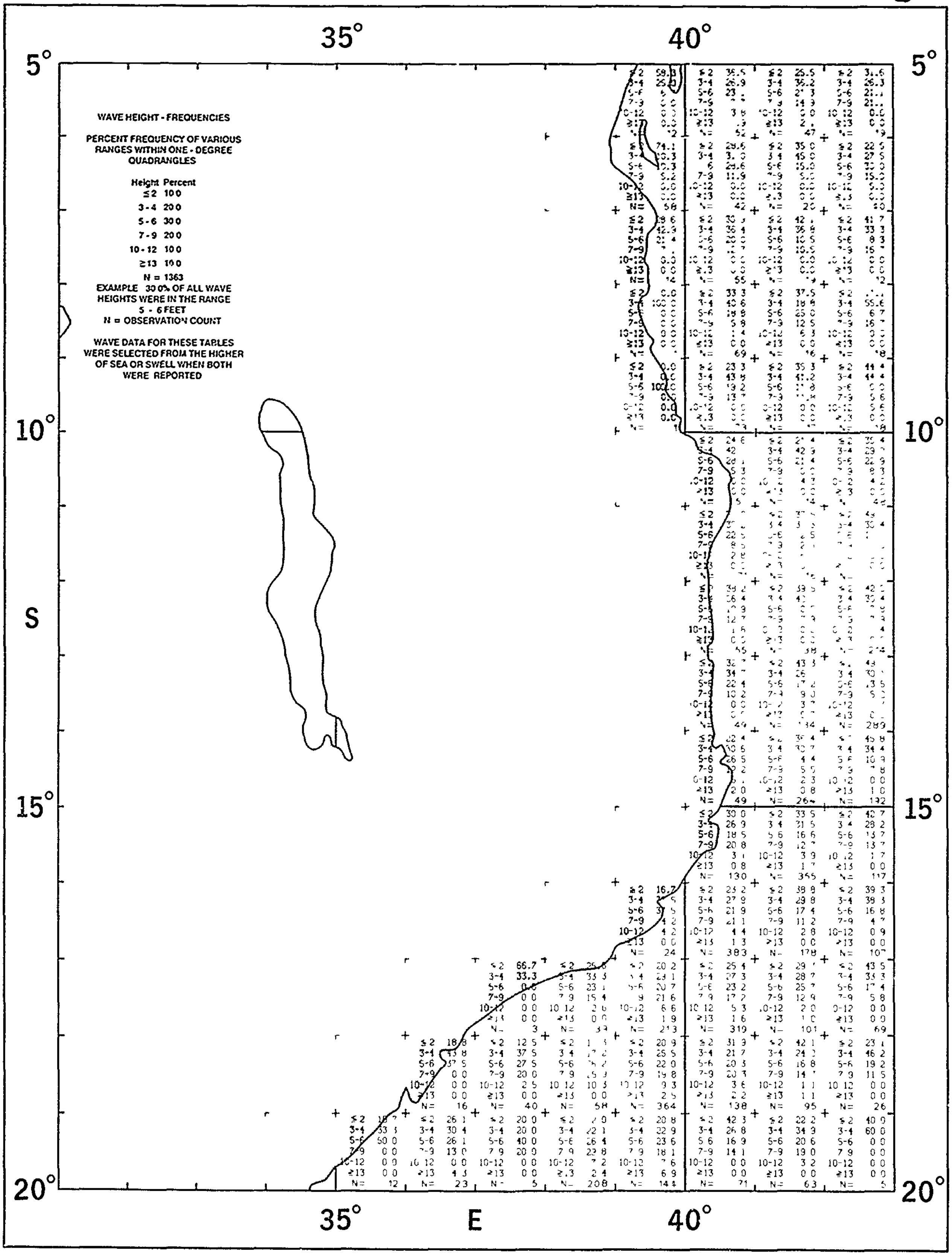

45°
50°
55°
20°
25°
30°
35°
S
E


AIR AND SEA TEMPERATURE
SOLID LINE - MEAN AIR TEMPERATURE (° F)
DASHED LINE - MEAN SEA SURFACE TEMPERATURE (° F)
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° 35°
S
81
81
81
80
80
79
79
78
78
77
77
76
76
75
74
73
72
71
70
69
68
67
66
65
64
63

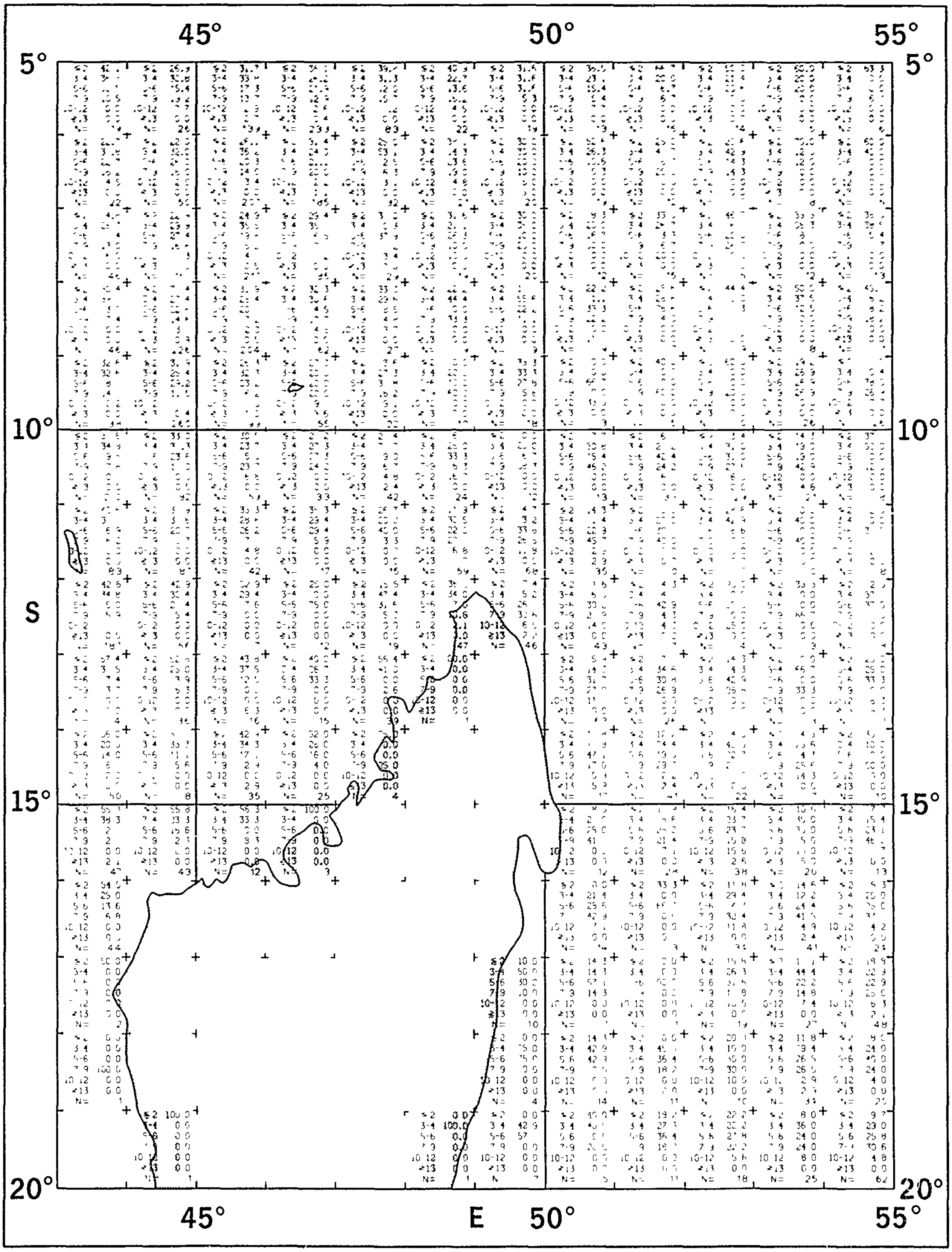

E 35° 40° 45° 50° 55°
5°
10°
15°
20°
25°
30°
S
35°
WAVE HEIGHTS
PERCENT FREQUENCY OF
SOLID LINE - WAVE HEIGHT ≥ 3 FEET
DASHED LINE - WAVE HEIGHT ≥ 8 FEET
THE WAVE HEIGHT USED FOR THIS MAP IS THE HIGHER OF SEA OR SWELL FOR OBSERVATIONS CONTAINING BOTH WAVE TRAINS. SEA IS DEFINED AS WAVES GENERATED BY LOCAL WINDS
≥ 3 FEET = ≥ CODE 2 (2 HALF METERS)
≥ 8 FEET = ≥ CODE 5 (5 HALF METERS)
70
70
80
60
50
60
70
80
90
90

November

Wave Height

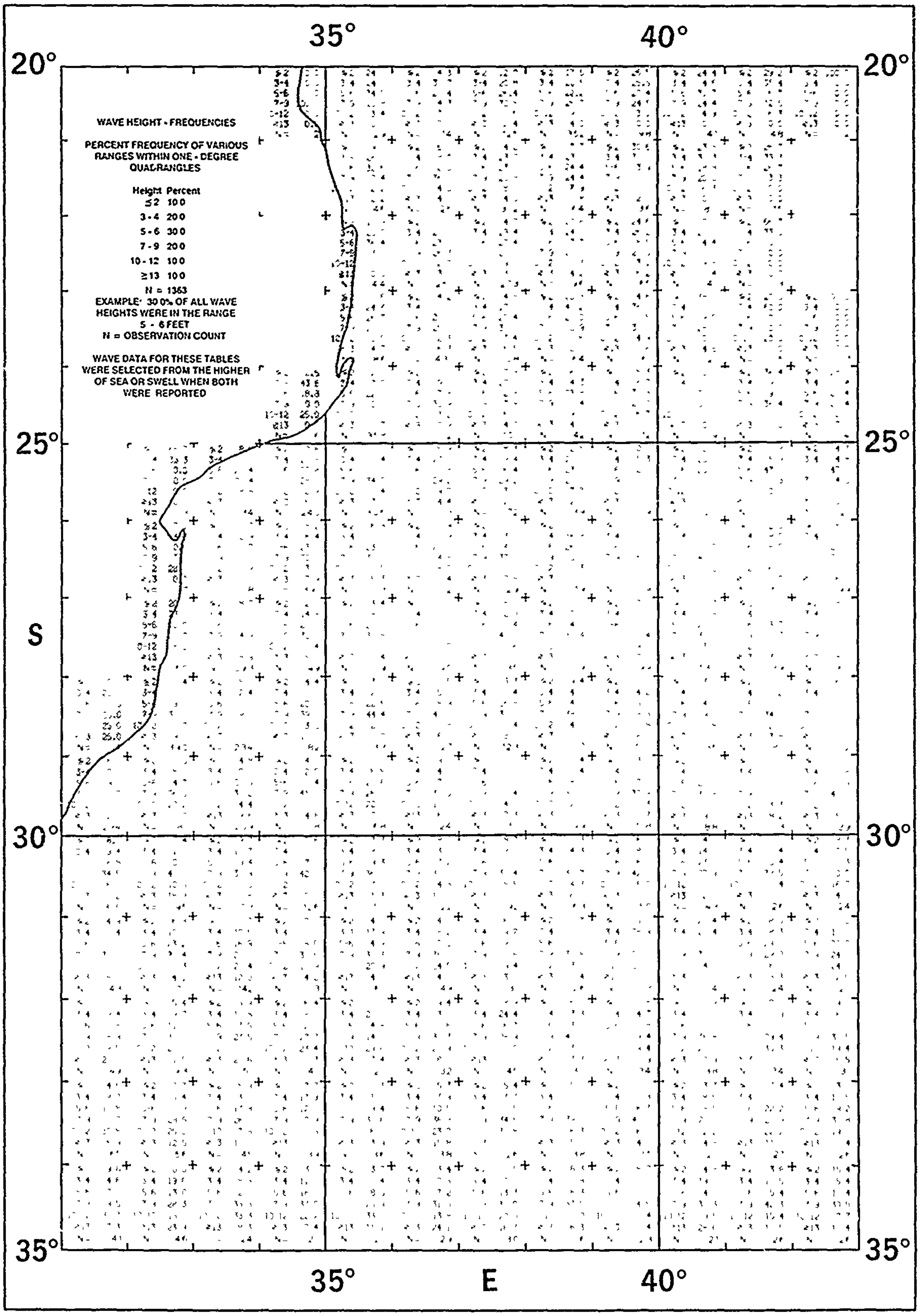


November **Wave Height**

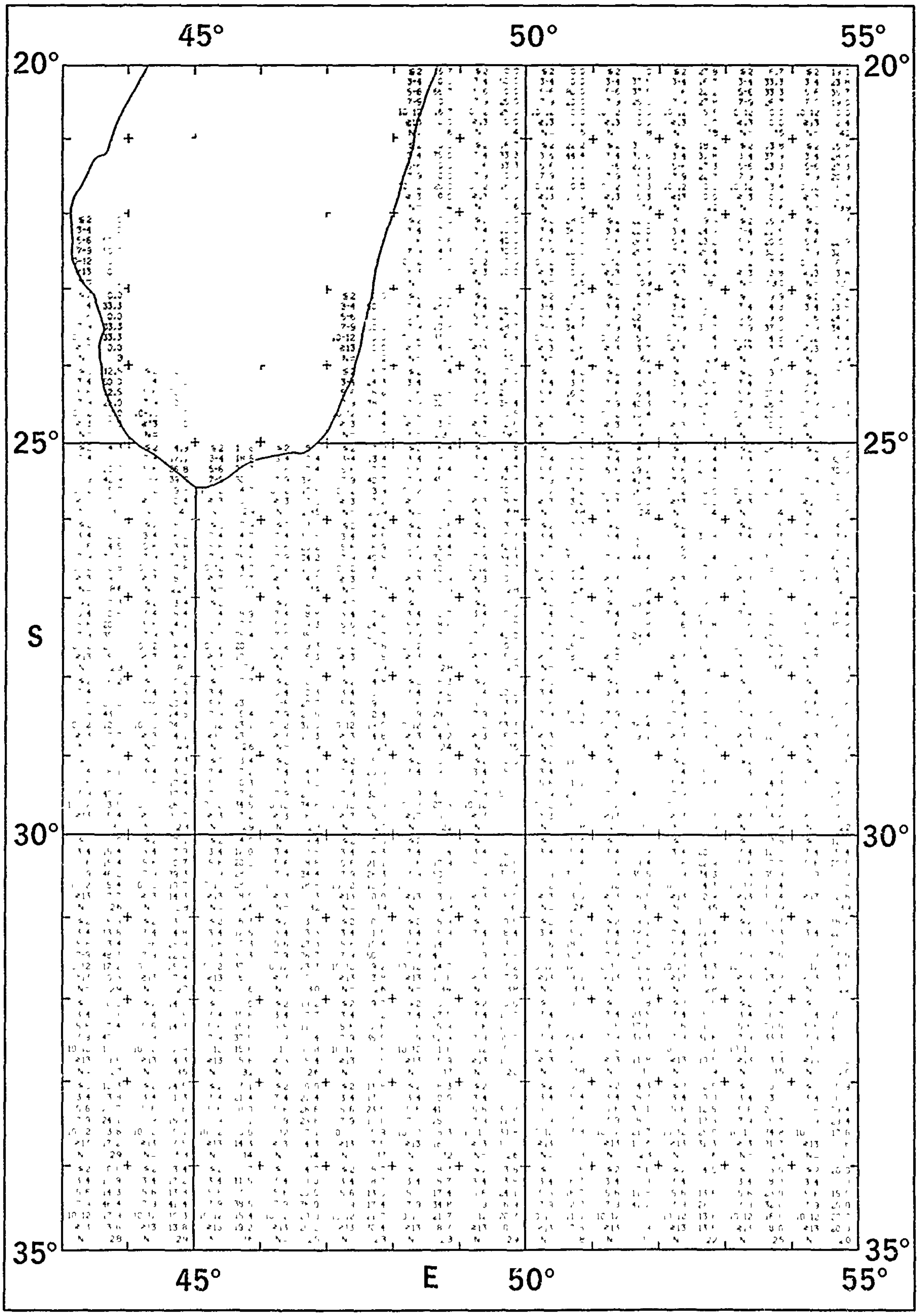


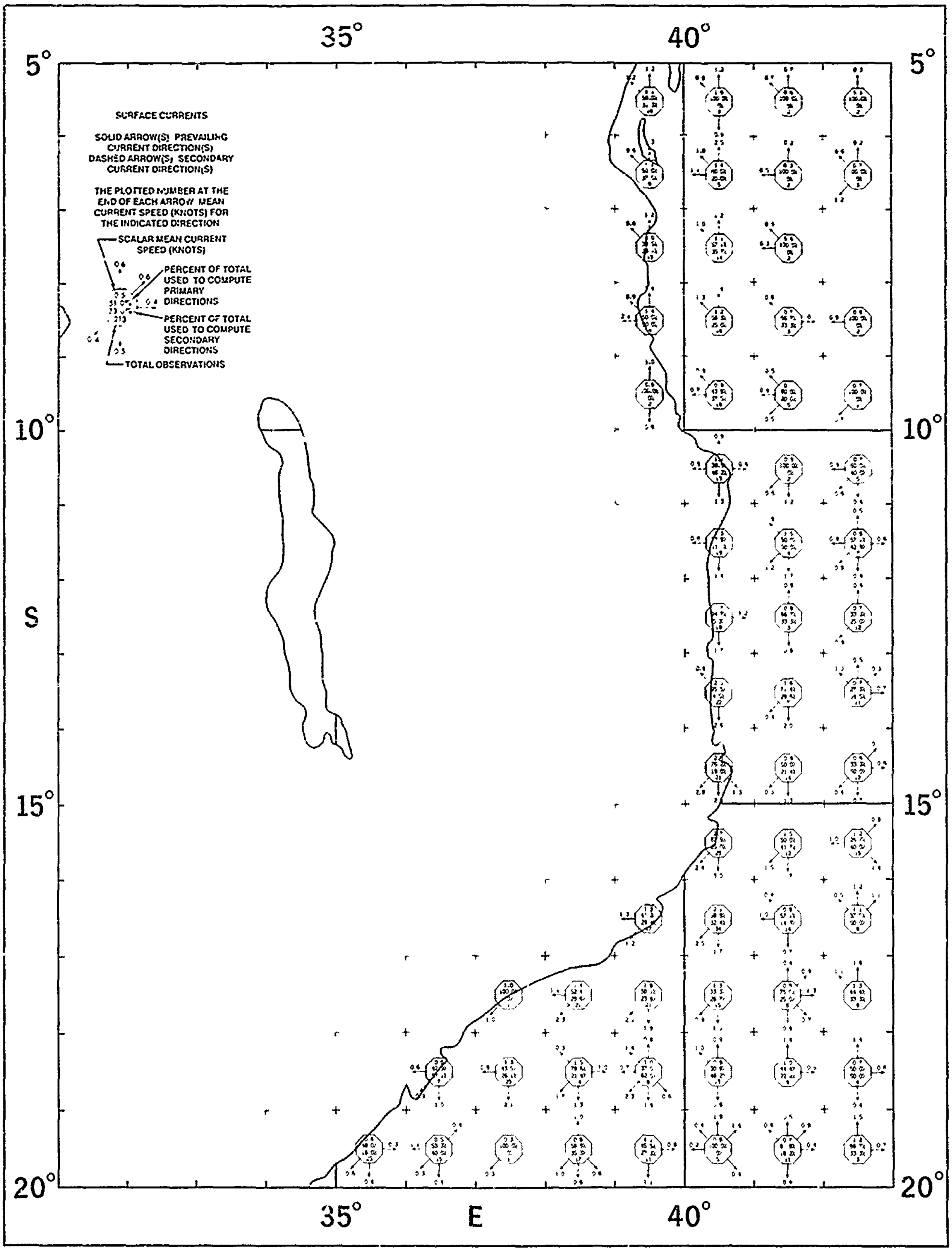
November

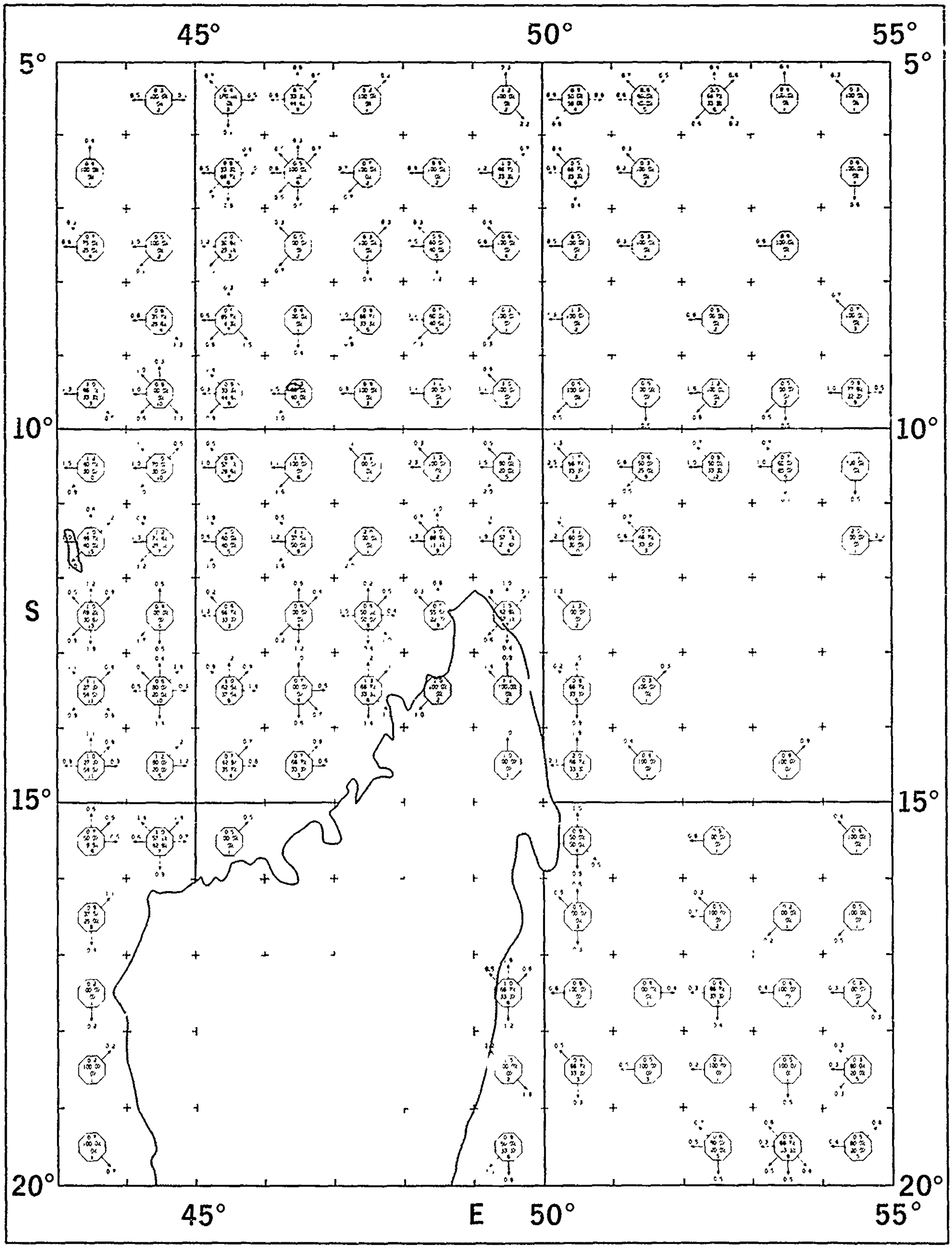
Wave Height



November **Wave Height**

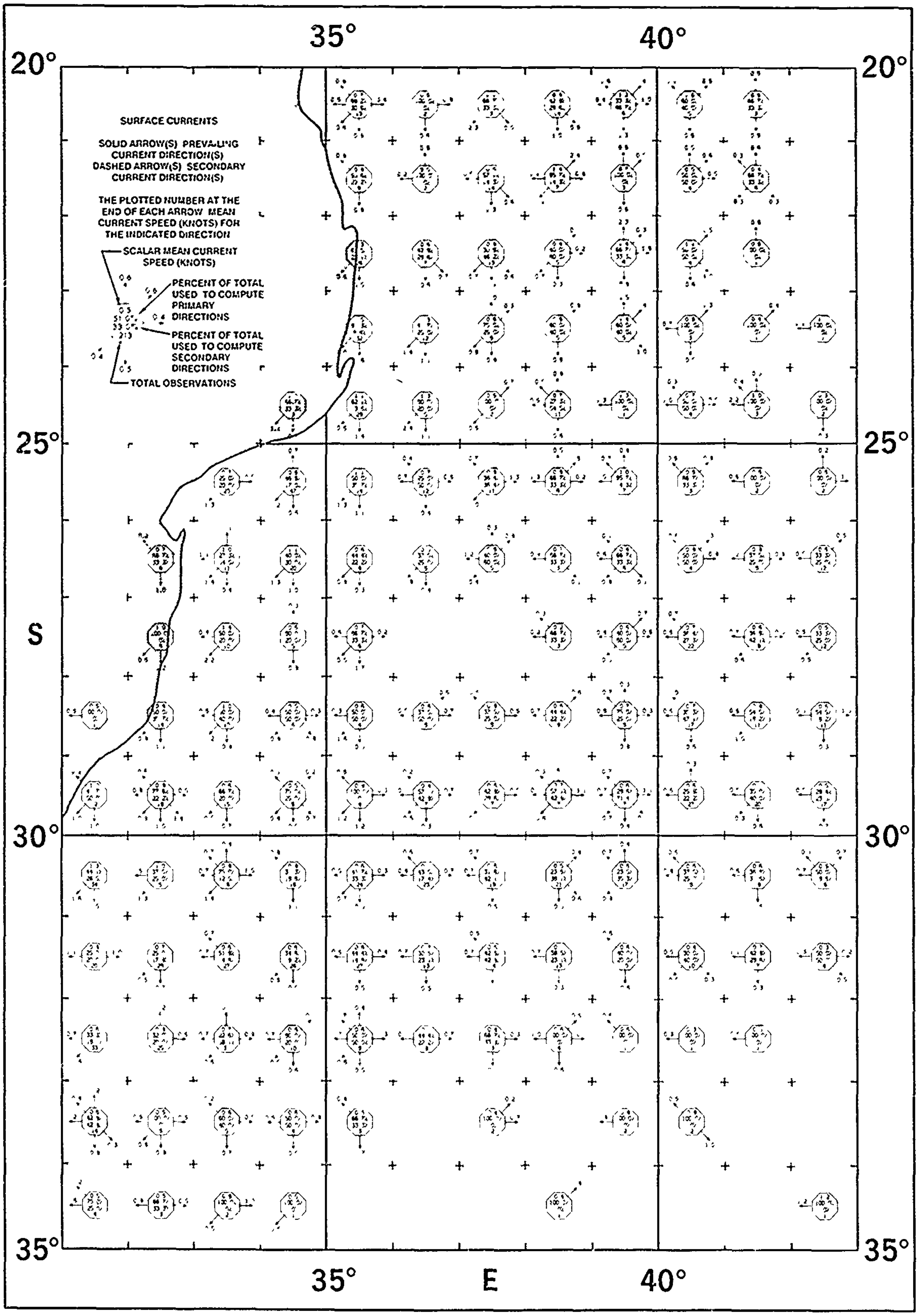


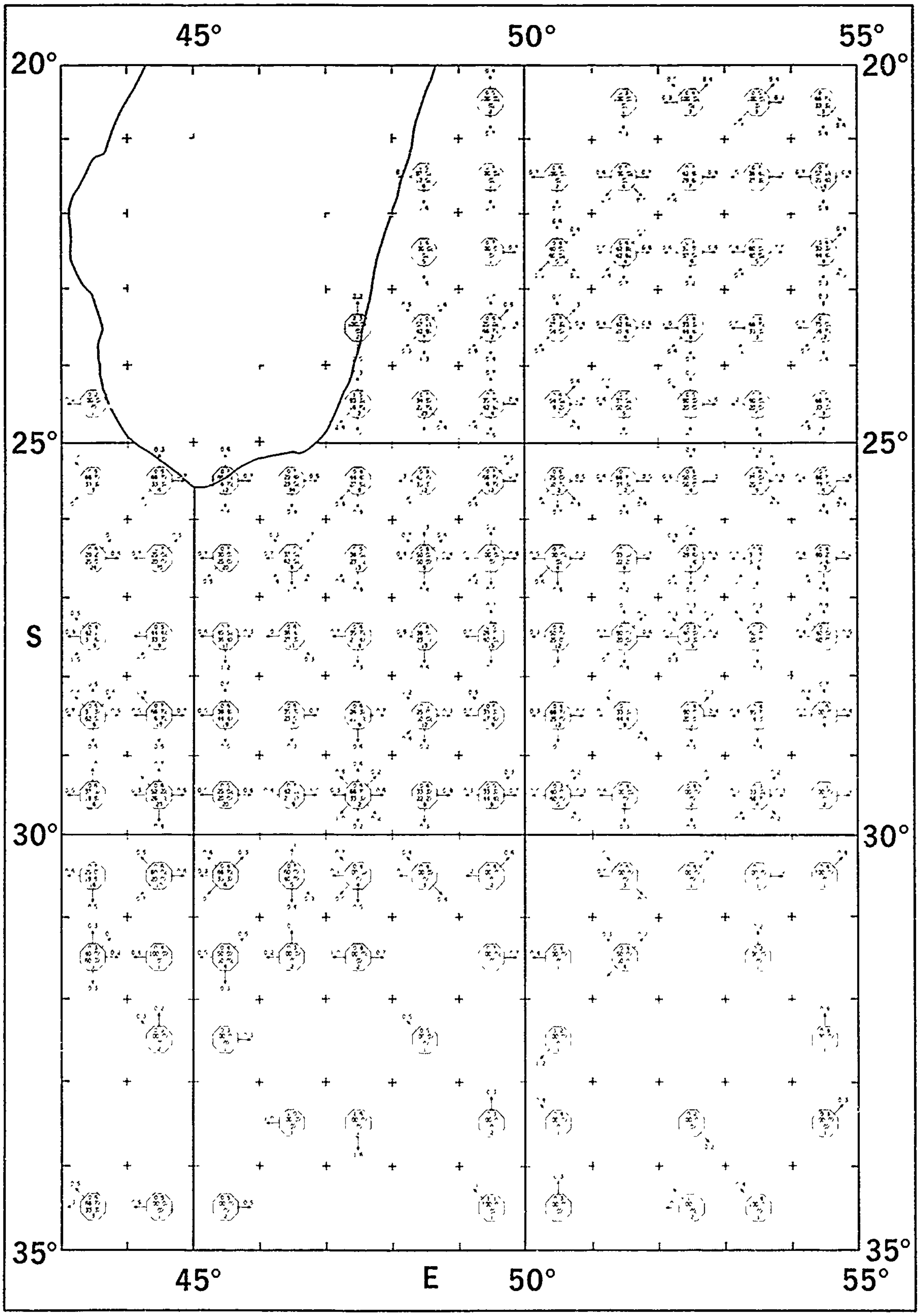

35°
40°
5°
10°
15°
20°
S
E
SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS


45°
50°
55°
5°
10°
15°
20°
S
E

November

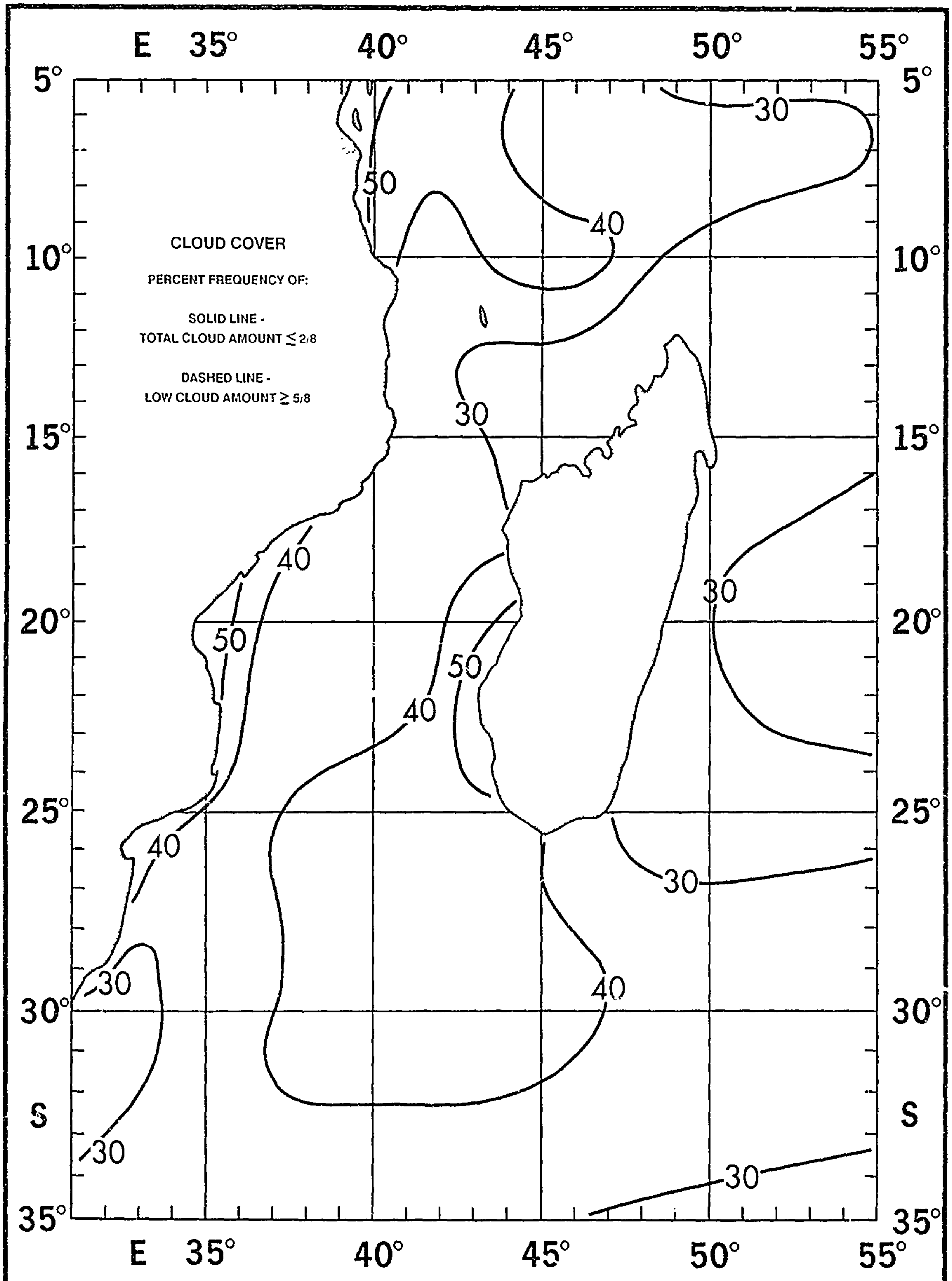
Surface Currents



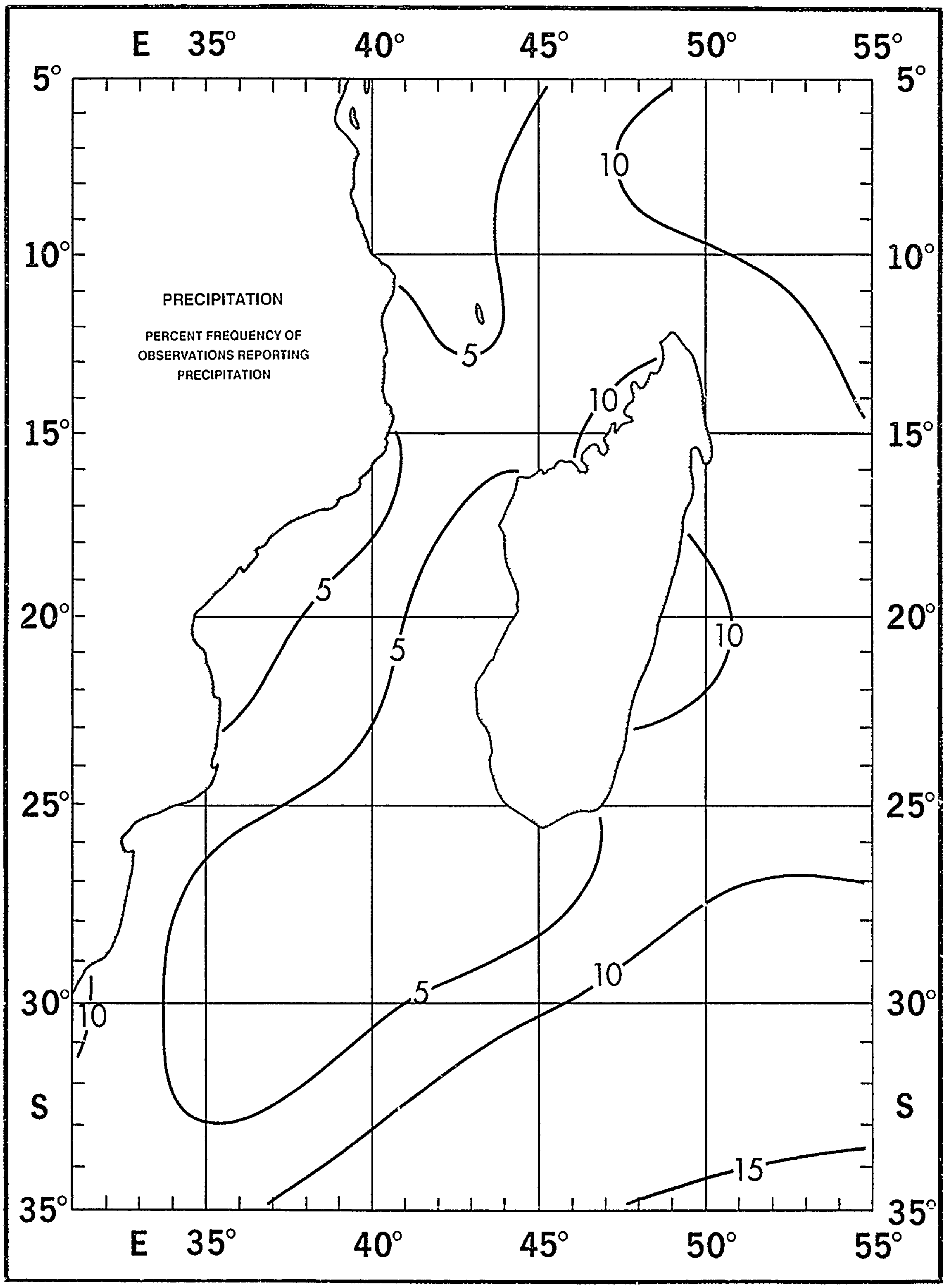

45°
50°
55°
20°
20°
25°
25°
S
30°
30°
35°
35°
45°
E
50°
55°

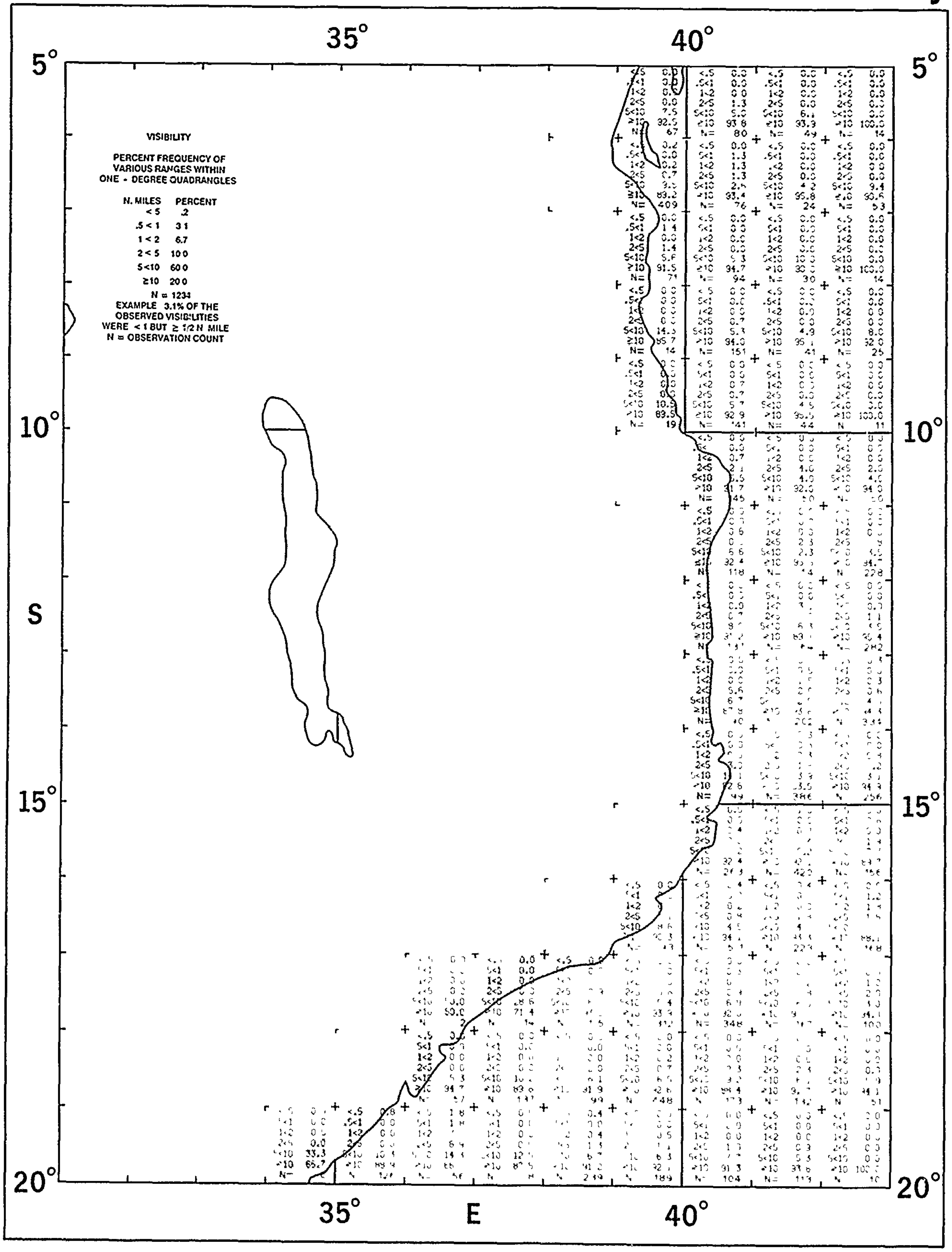
December

Clouds



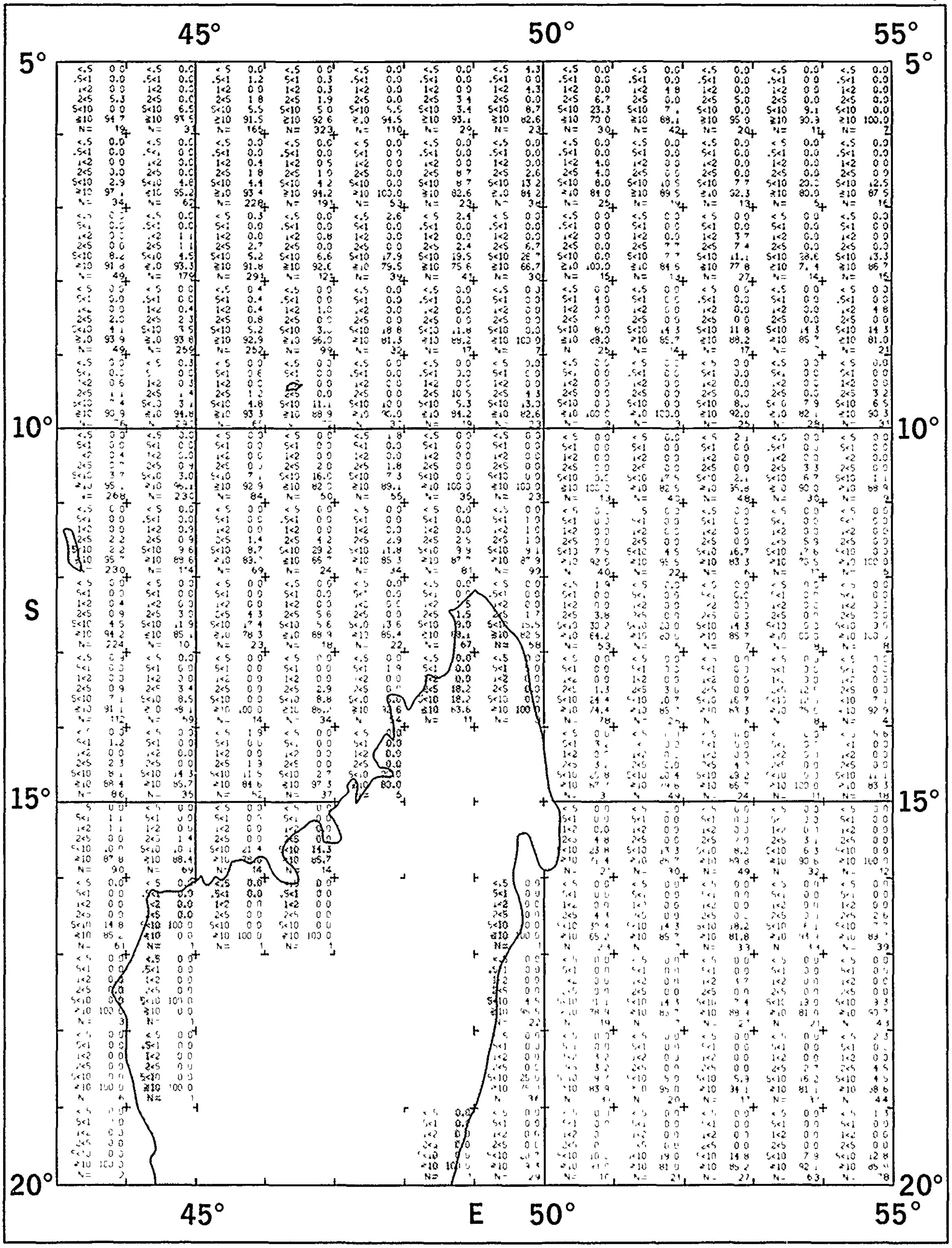
December Precipitation

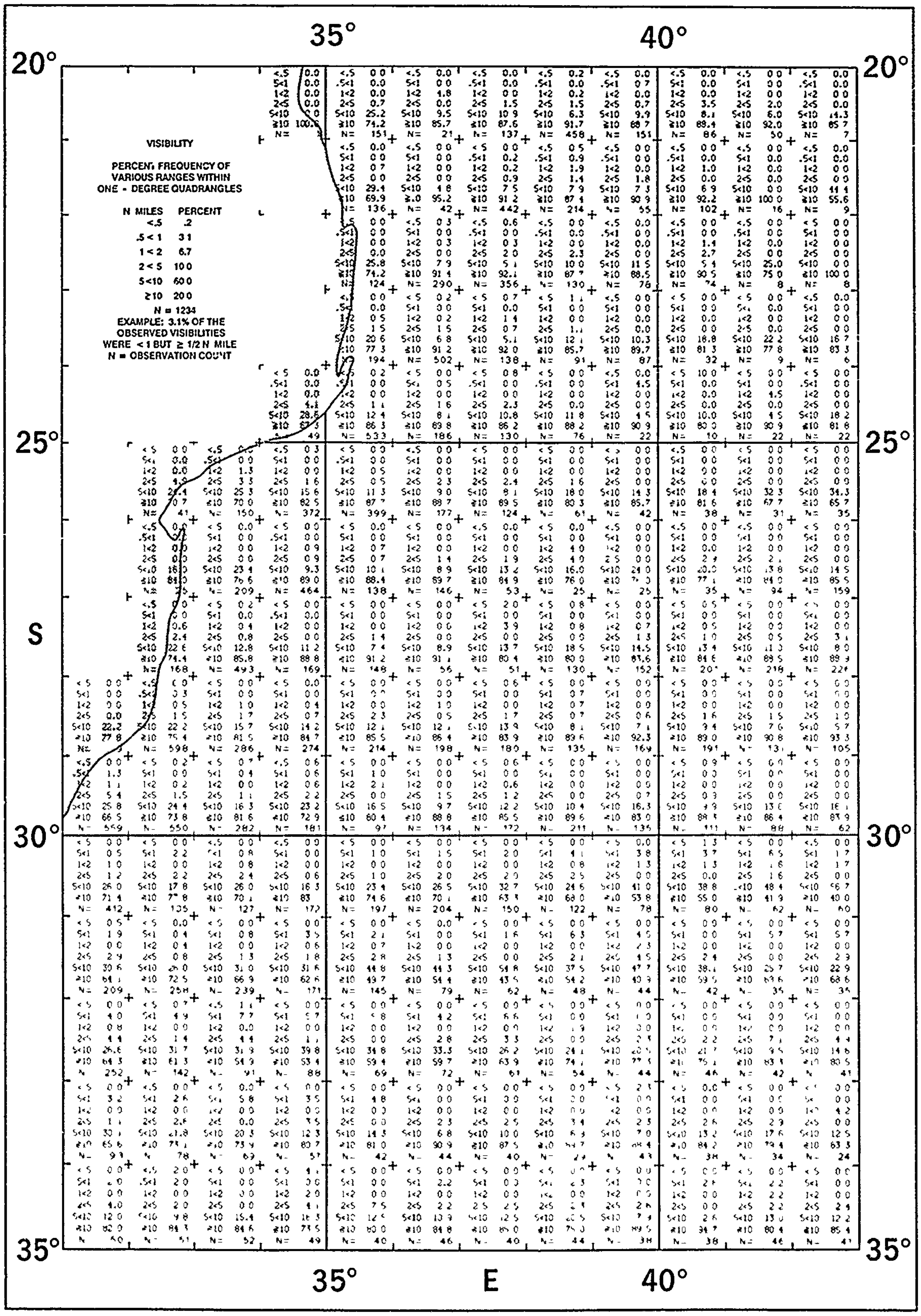



35°
40°
5°
10°
S
15°
20°
E
VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N. MILES PERCENT
<.5 .2
.5<1 3.1
1<2 6.7
2<5 10.0
5<10 60.0
≥10 20.0
N = 1234
EXAMPLE 3.1% OF THE OBSERVED VISIBILITIES WERE < 1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT

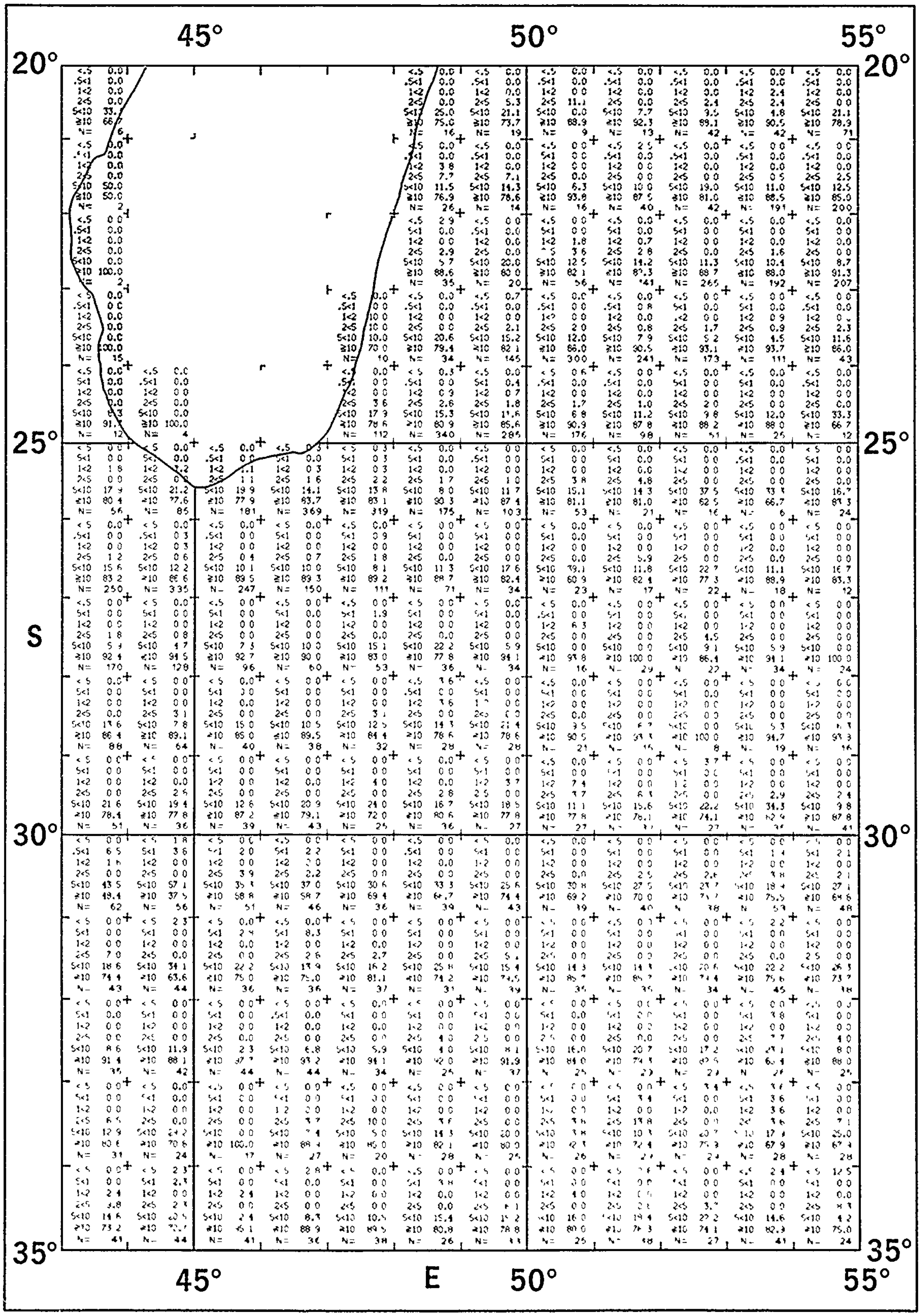
December

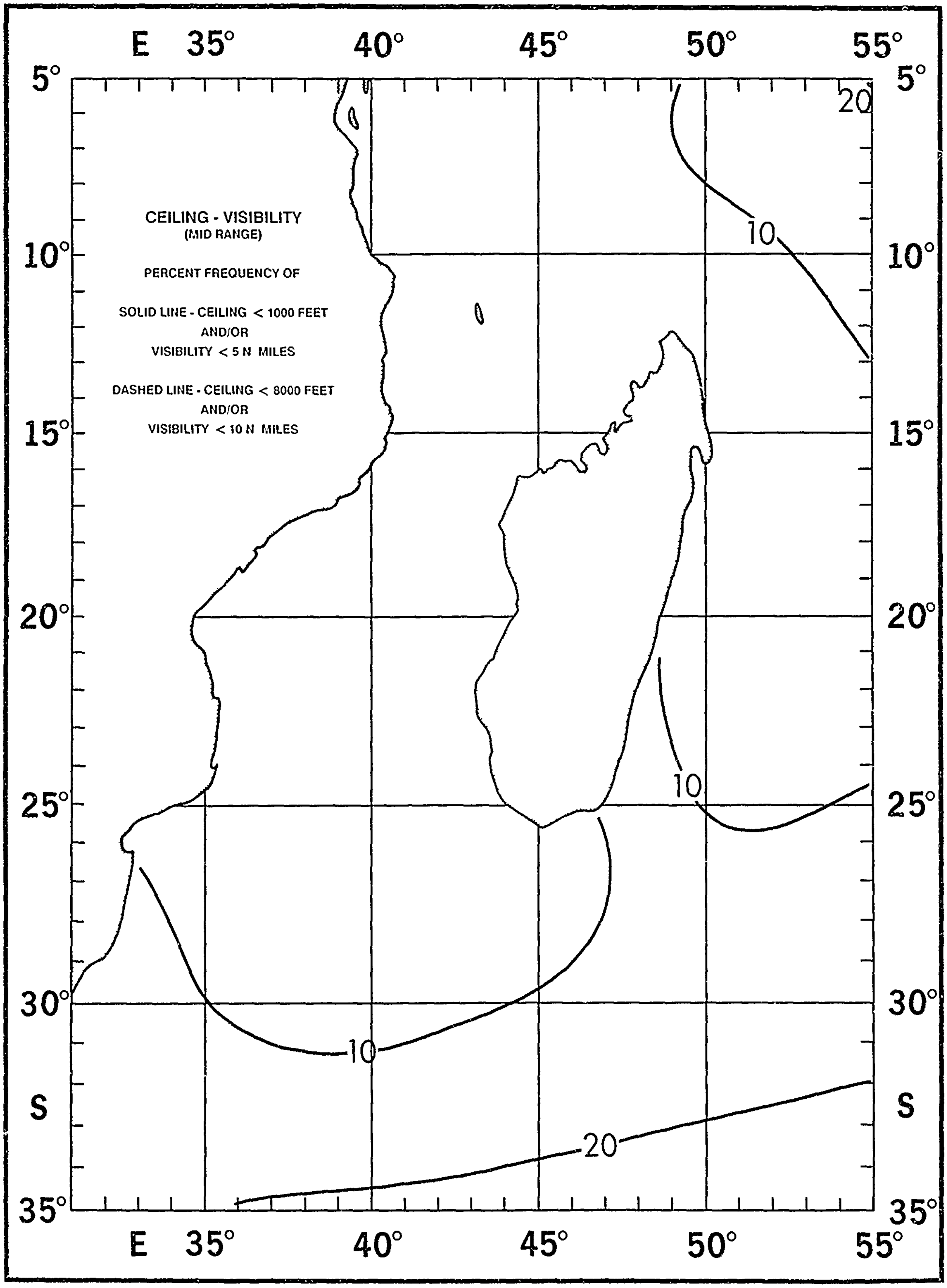
Visibility




35°
40°
20°
25°
30°
35°
S
E
VISIBILITY
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
N MILES PERCENT
<.5 .2
.5<1 3.1
1<2 6.7
2<5 10.0
5<10 60.0
≥10 20.0
N = 1234
EXAMPLE: 3.1% OF THE OBSERVED VISIBILITIES WERE < 1 BUT ≥ 1/2 N MILE
N = OBSERVATION COUNT

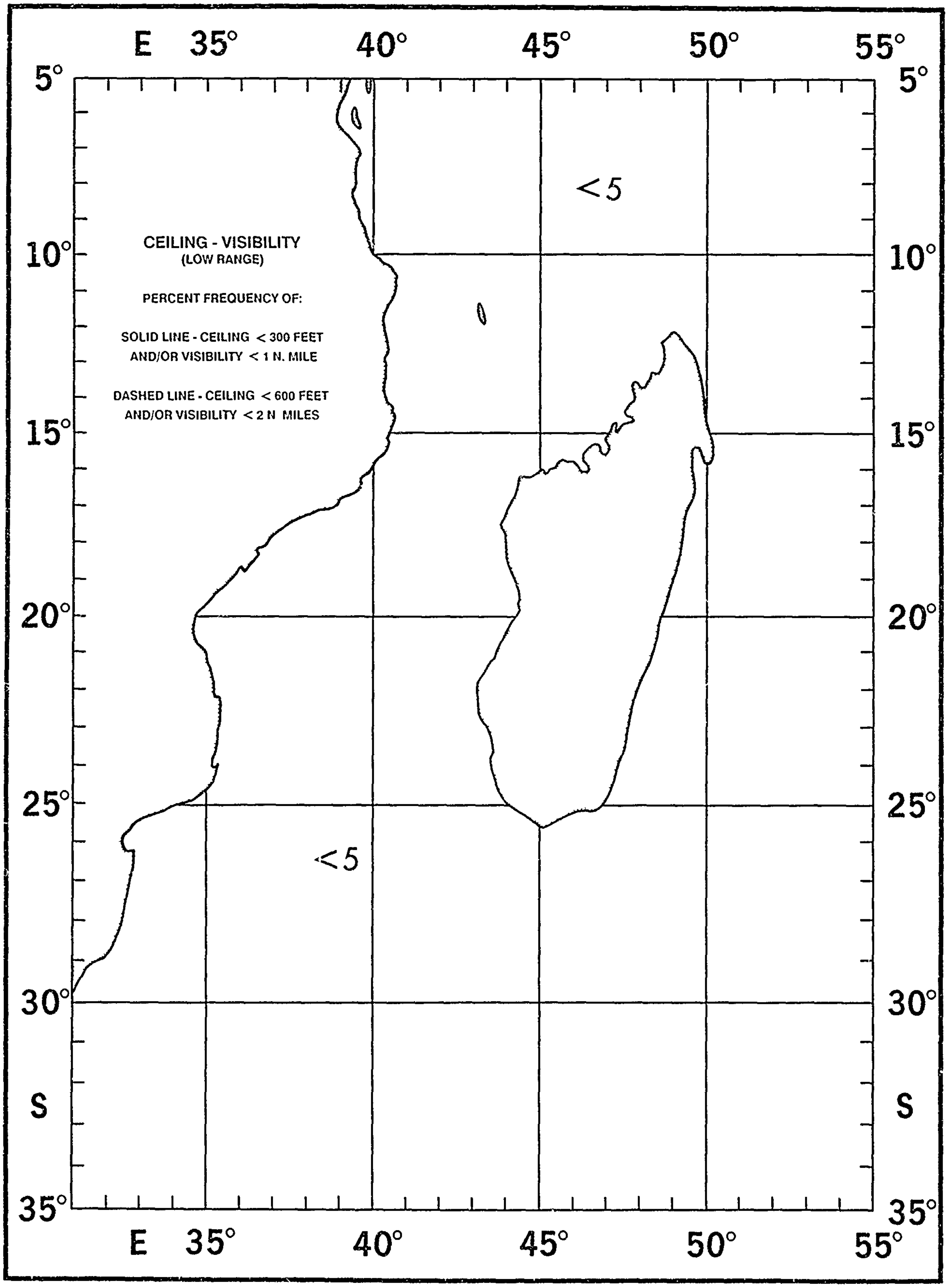
December **Visibility**




E 35°
40°
45°
50°
55°
5°
10°
15°
20°
25°
30°
S
35°
CEILING - VISIBILITY
(MID RANGE)
PERCENT FREQUENCY OF
SOLID LINE - CEILING < 1000 FEET
AND/OR
VISIBILITY < 5 N MILES
DASHED LINE - CEILING < 8000 FEET
AND/OR
VISIBILITY < 10 N MILES
20
10
10
10
20

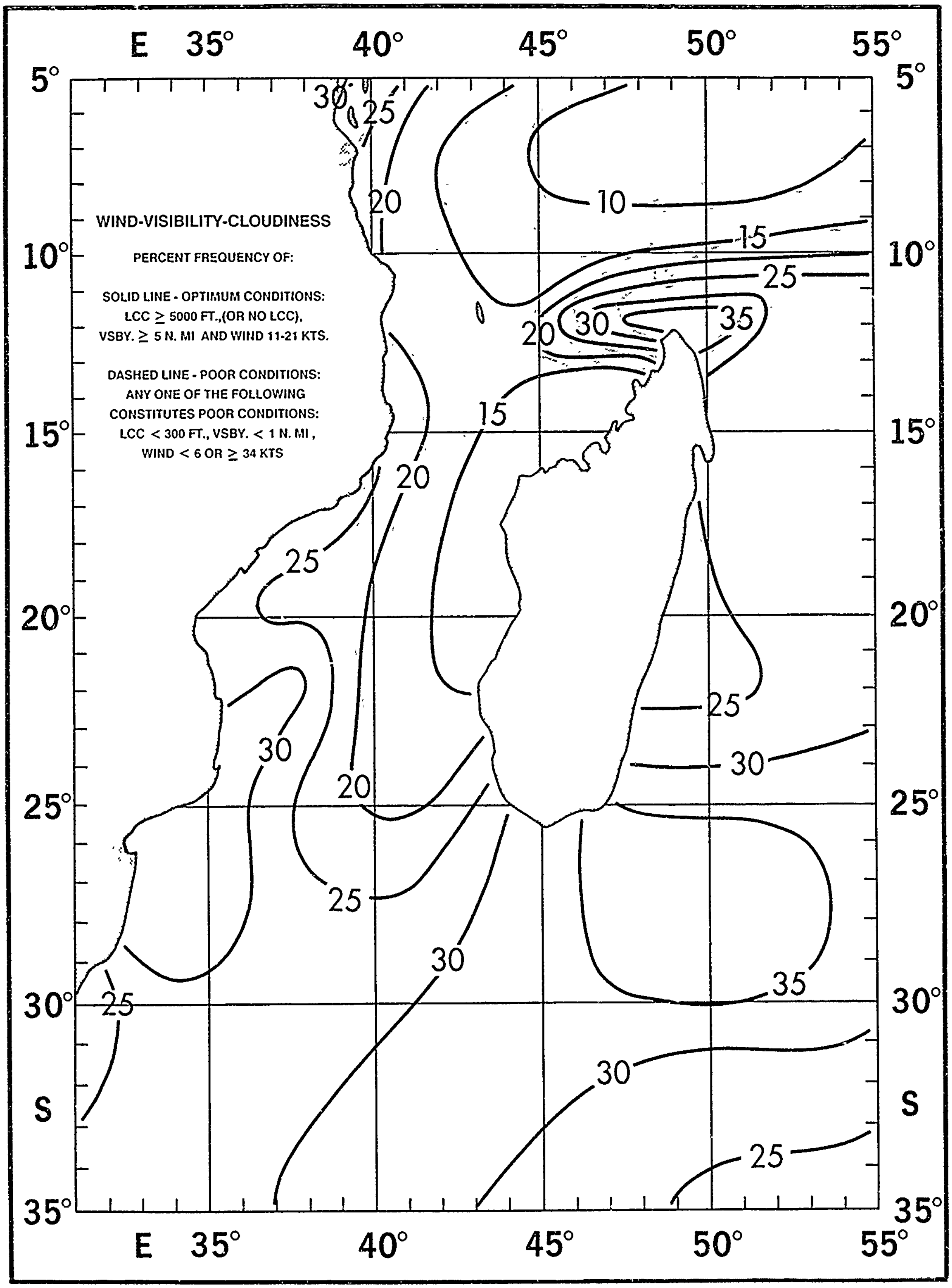
December

Ceiling - Visibility (Low Range)

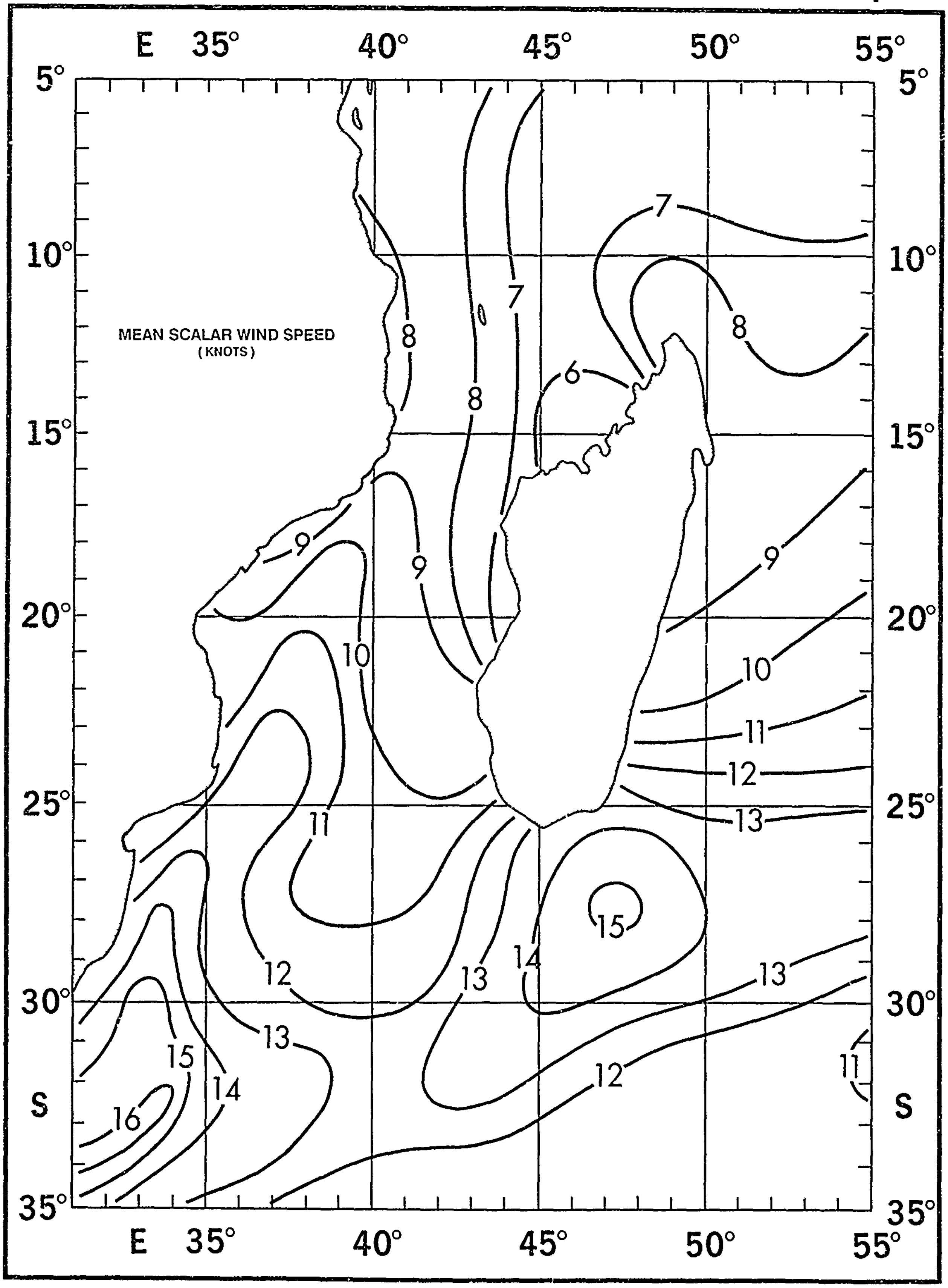


December

Wind - Visibility - Cloudiness

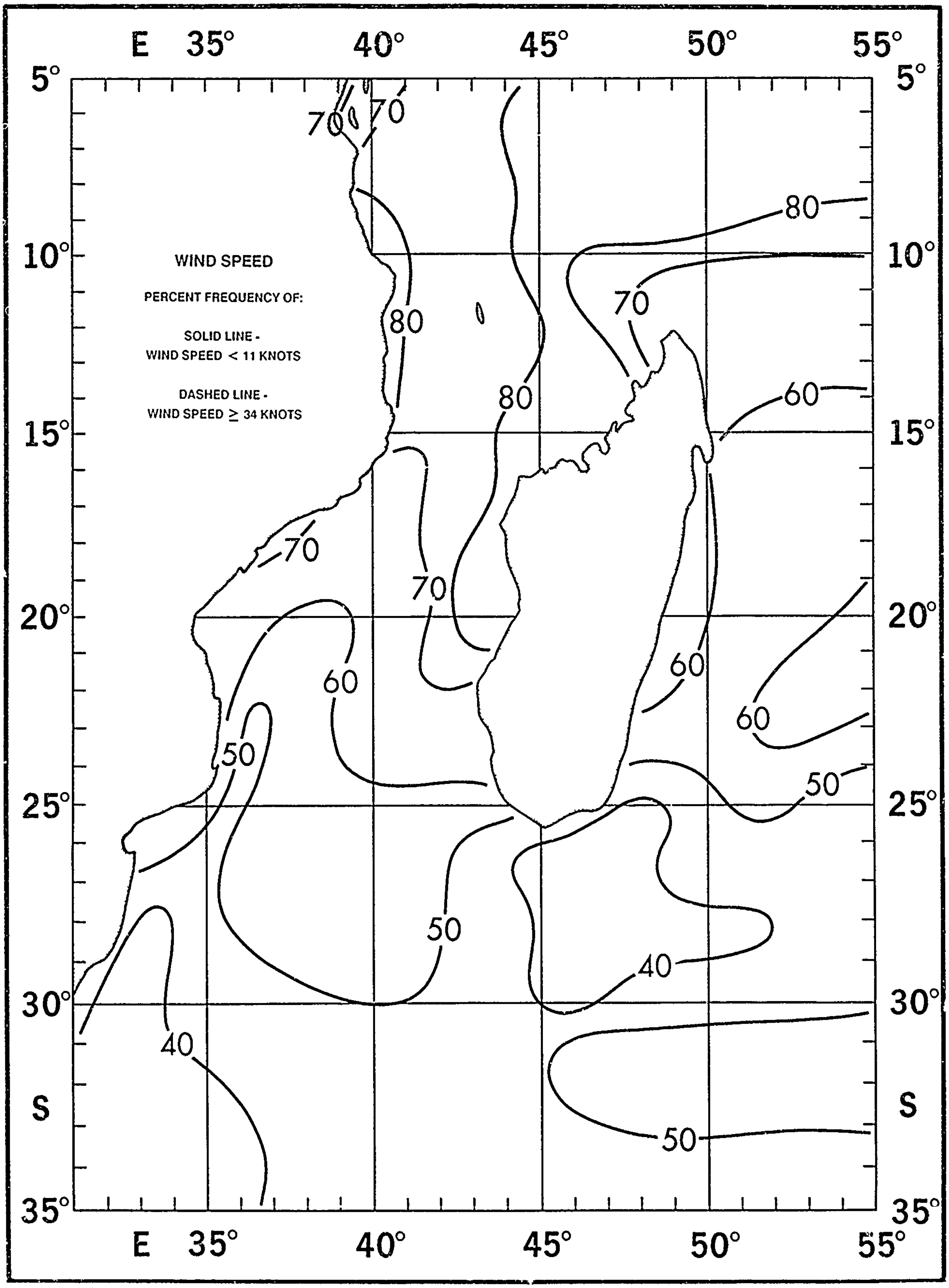


December   Mean Scalar Wind Speed

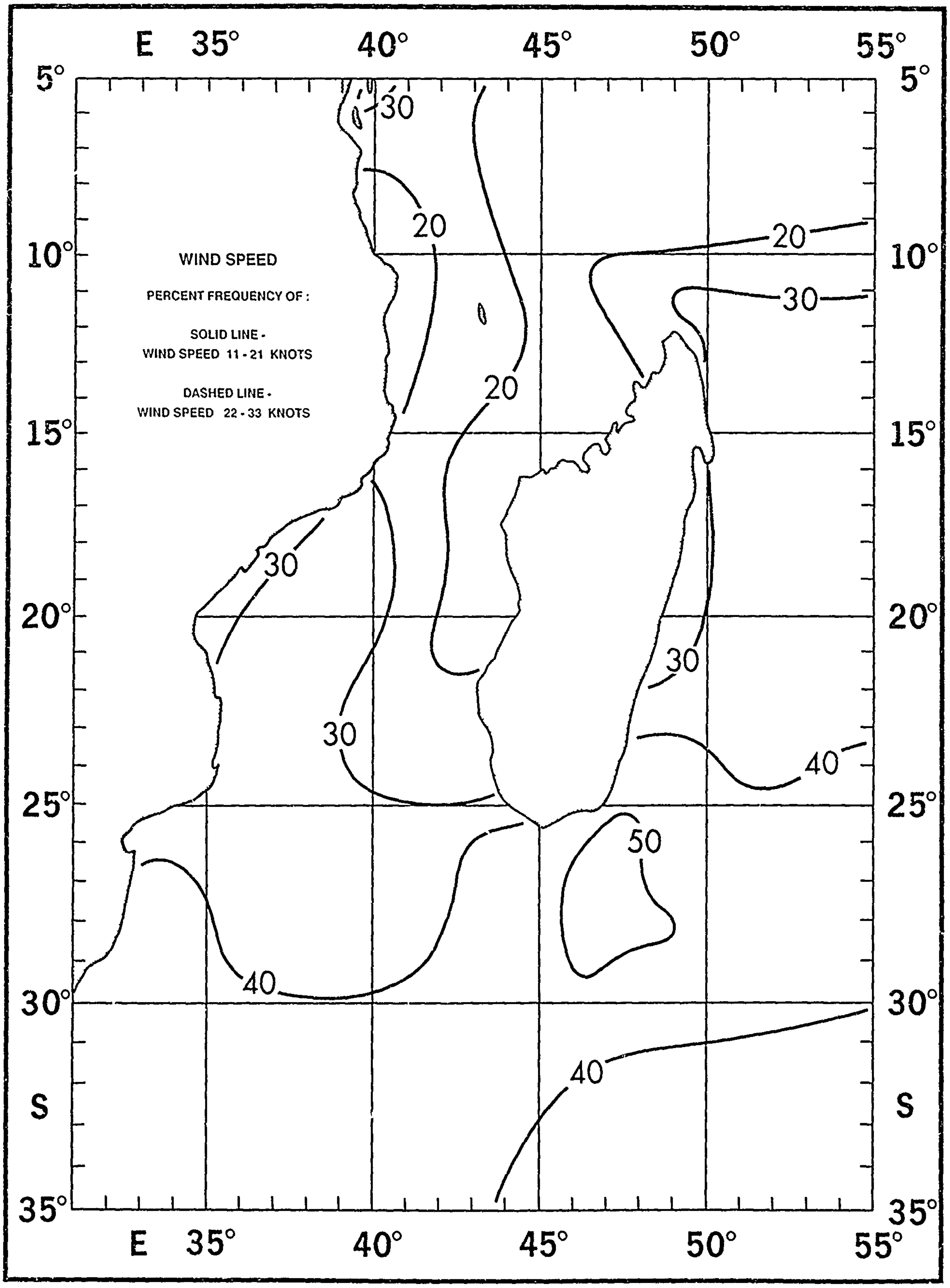


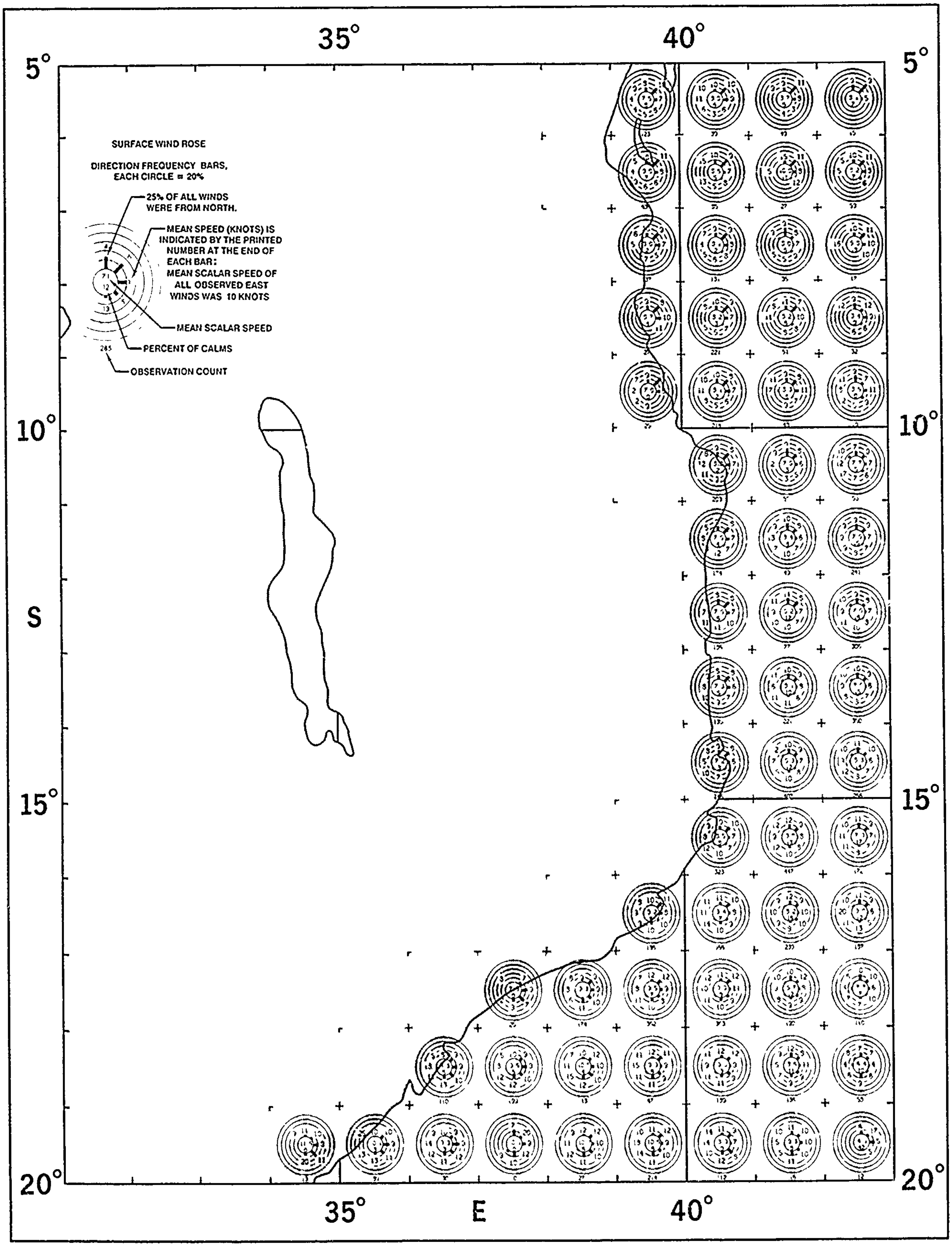
December

Wind Speed <11 and ≥34 Knots



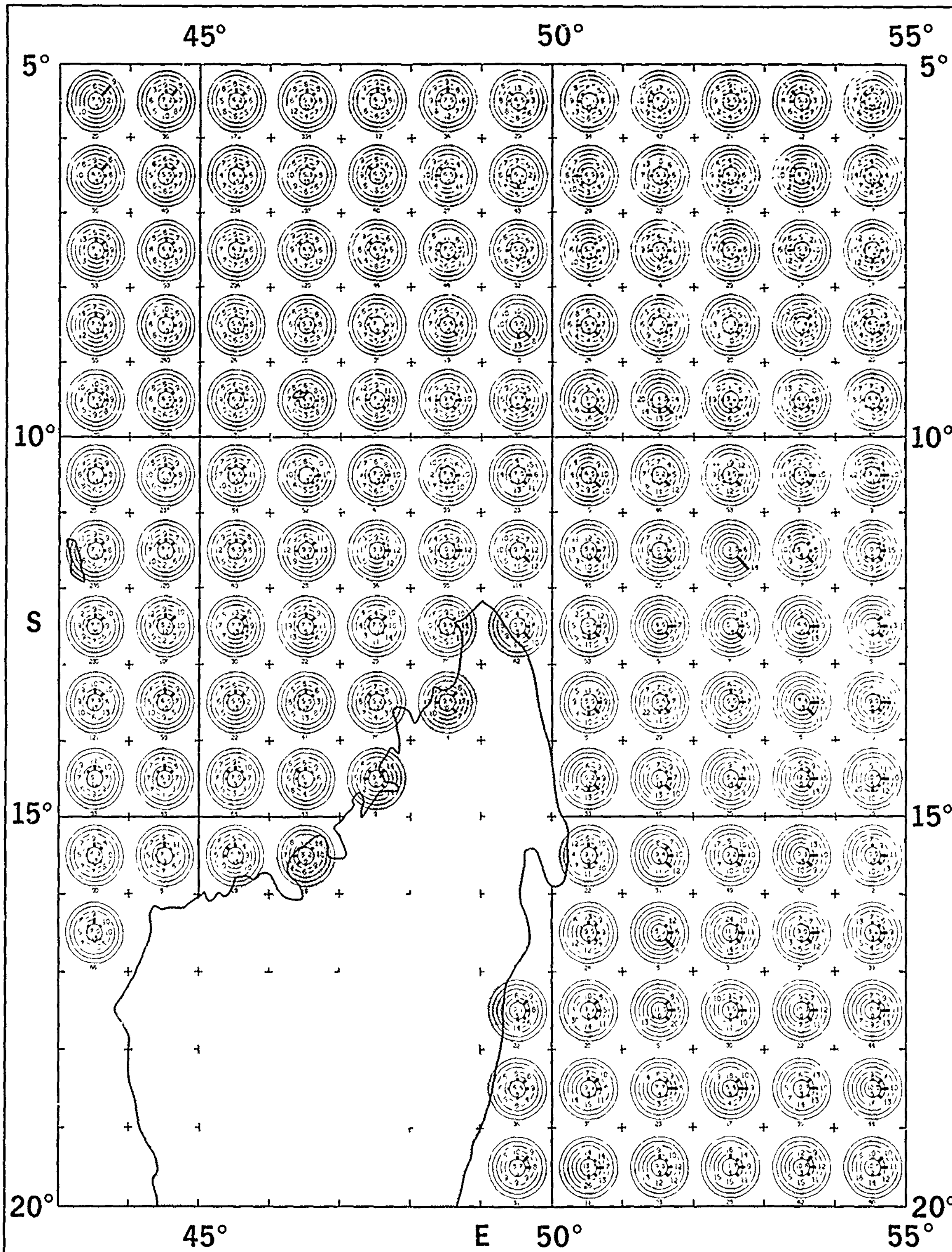
December Wind Speed 11 - 21 and 22 - 33 Knots

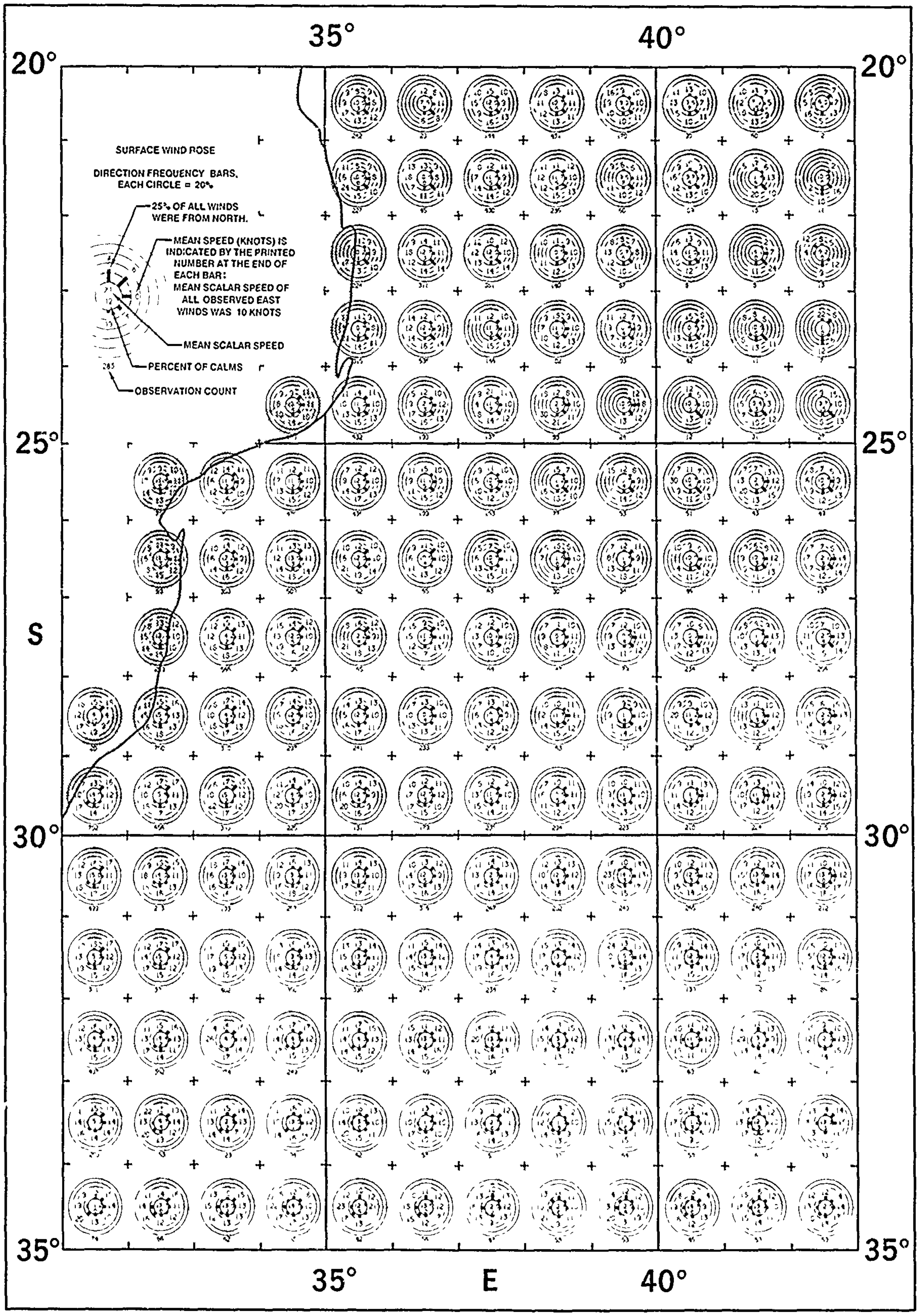


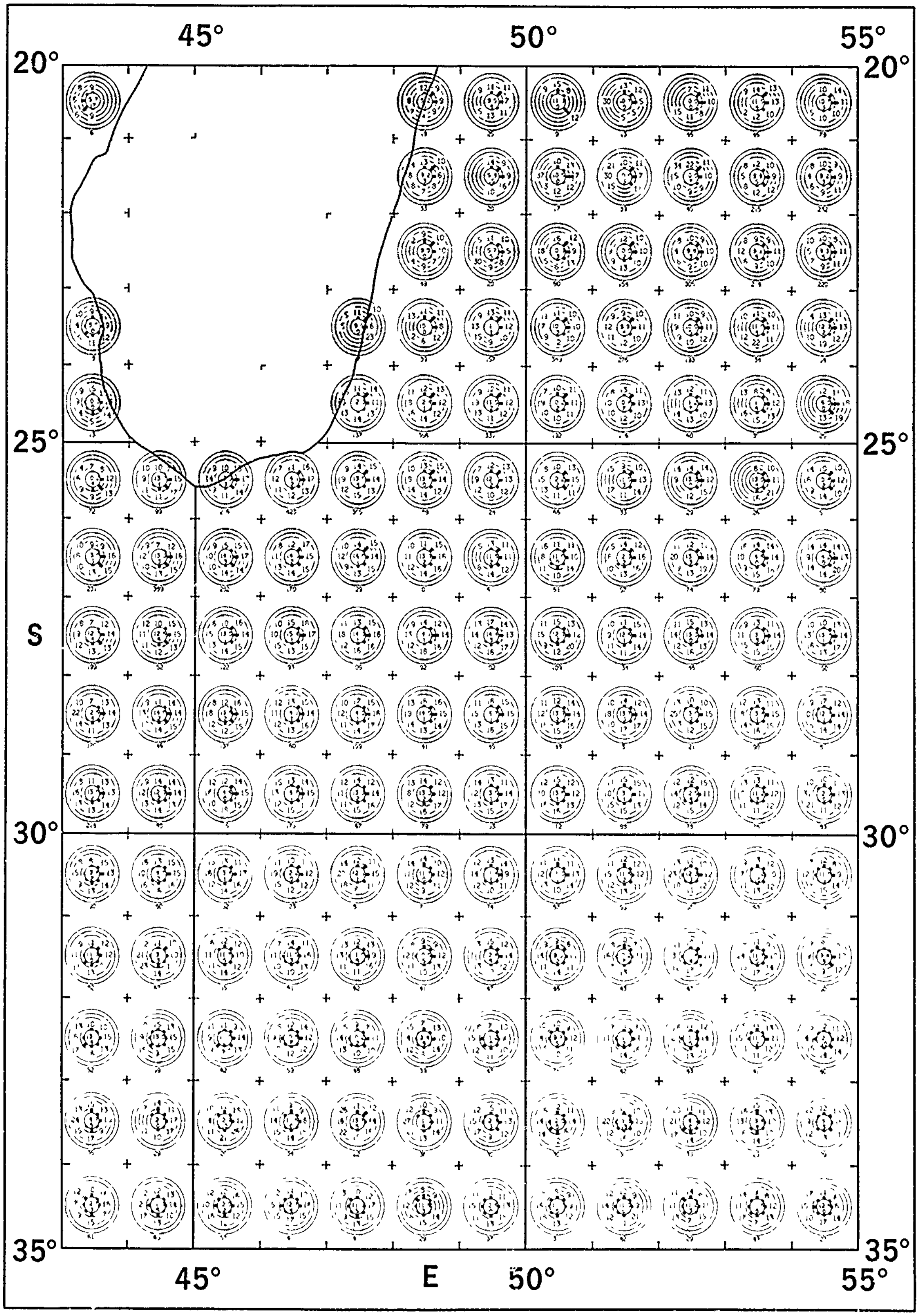

35°
40°
5°
10°
15°
20°
S
E
SURFACE WIND ROSE
DIRECTION FREQUENCY BARS, EACH CIRCLE = 20%
25% OF ALL WINDS WERE FROM NORTH.
MEAN SPEED (KNOTS) IS INDICATED BY THE PRINTED NUMBER AT THE END OF EACH BAR; MEAN SCALAR SPEED OF ALL OBSERVED EAST WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT

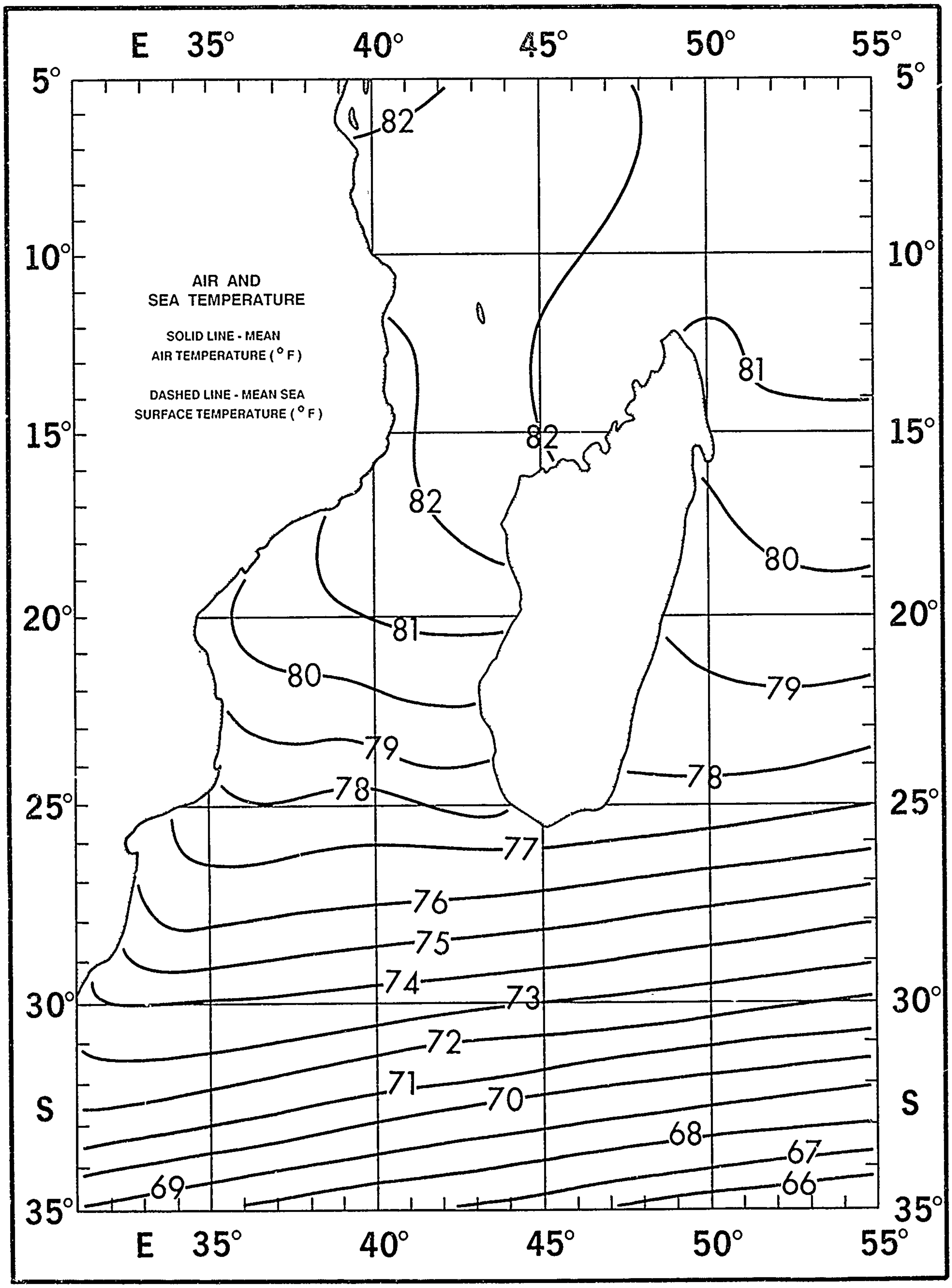
December

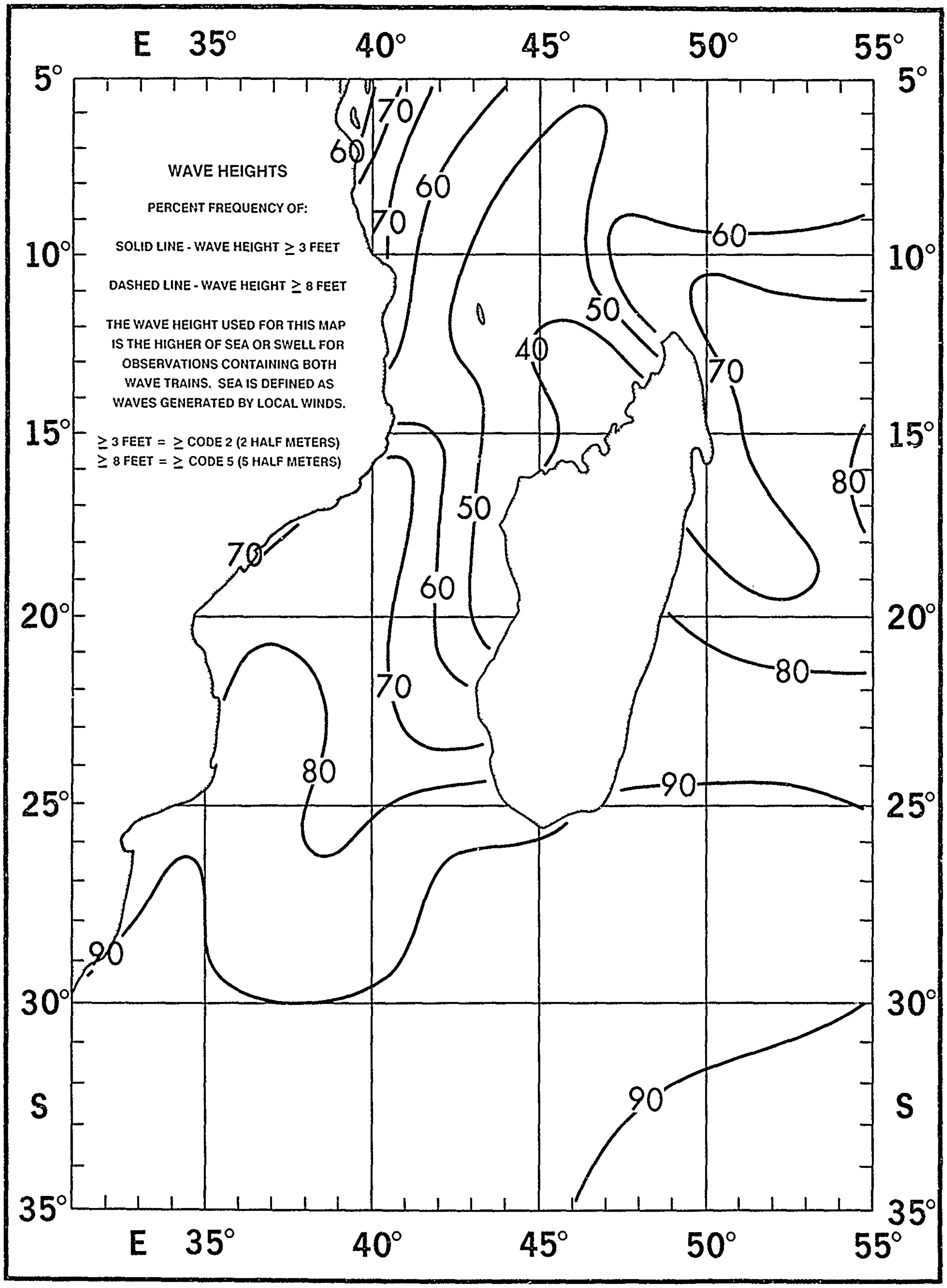
Surface Wind Roses

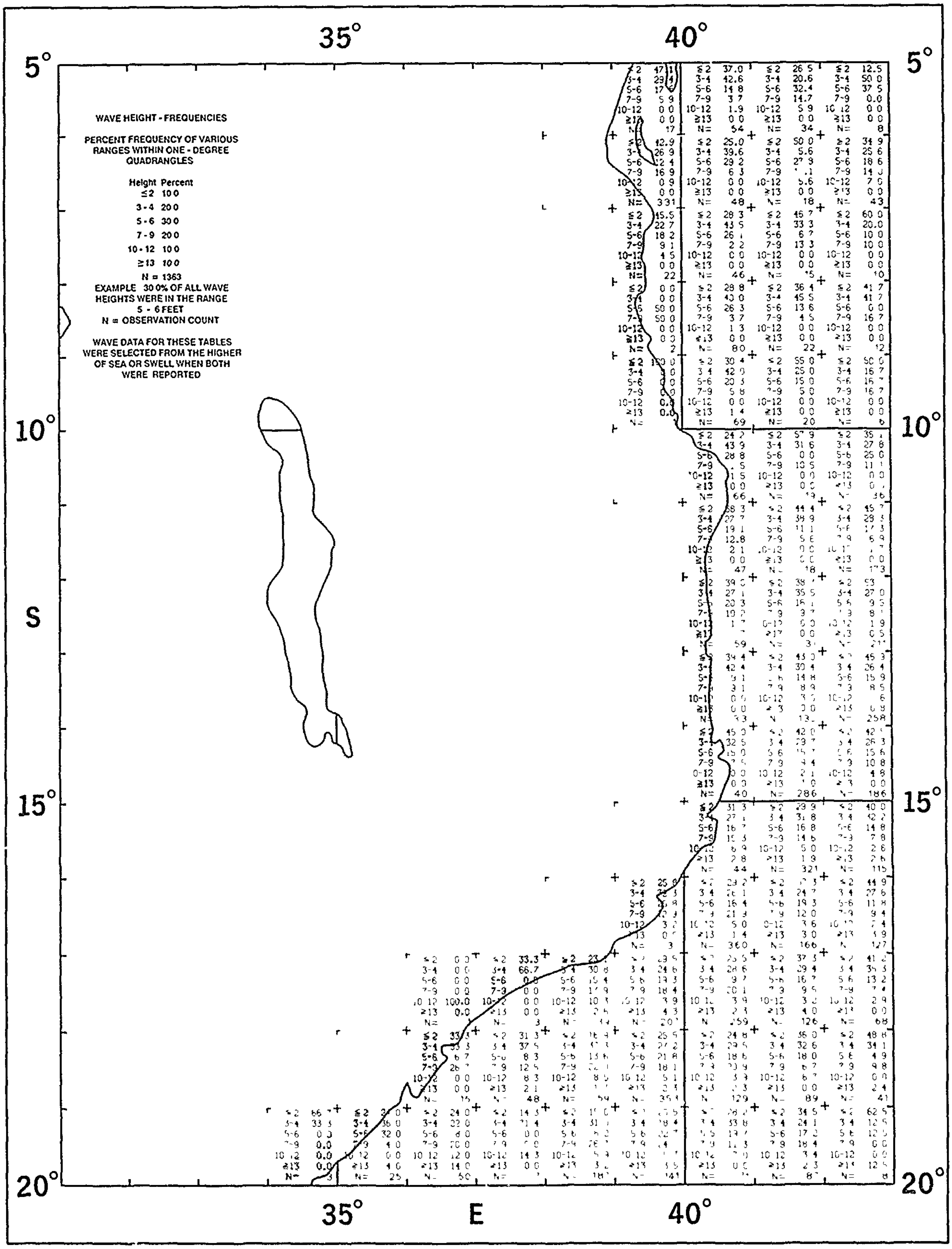



SURFACE WIND ROSE
DIRECTION FREQUENCY BARS, EACH CIRCLE = 20%
25% OF ALL WINDS WERE FROM NORTH.
MEAN SPEED (KNOTS) IS INDICATED BY THE PRINTED NUMBER AT THE END OF EACH BAR: MEAN SCALAR SPEED OF ALL OBSERVED EAST WINDS WAS 10 KNOTS
MEAN SCALAR SPEED
PERCENT OF CALMS
OBSERVATION COUNT
35°
40°
20°
25°
S
30°
35°
E

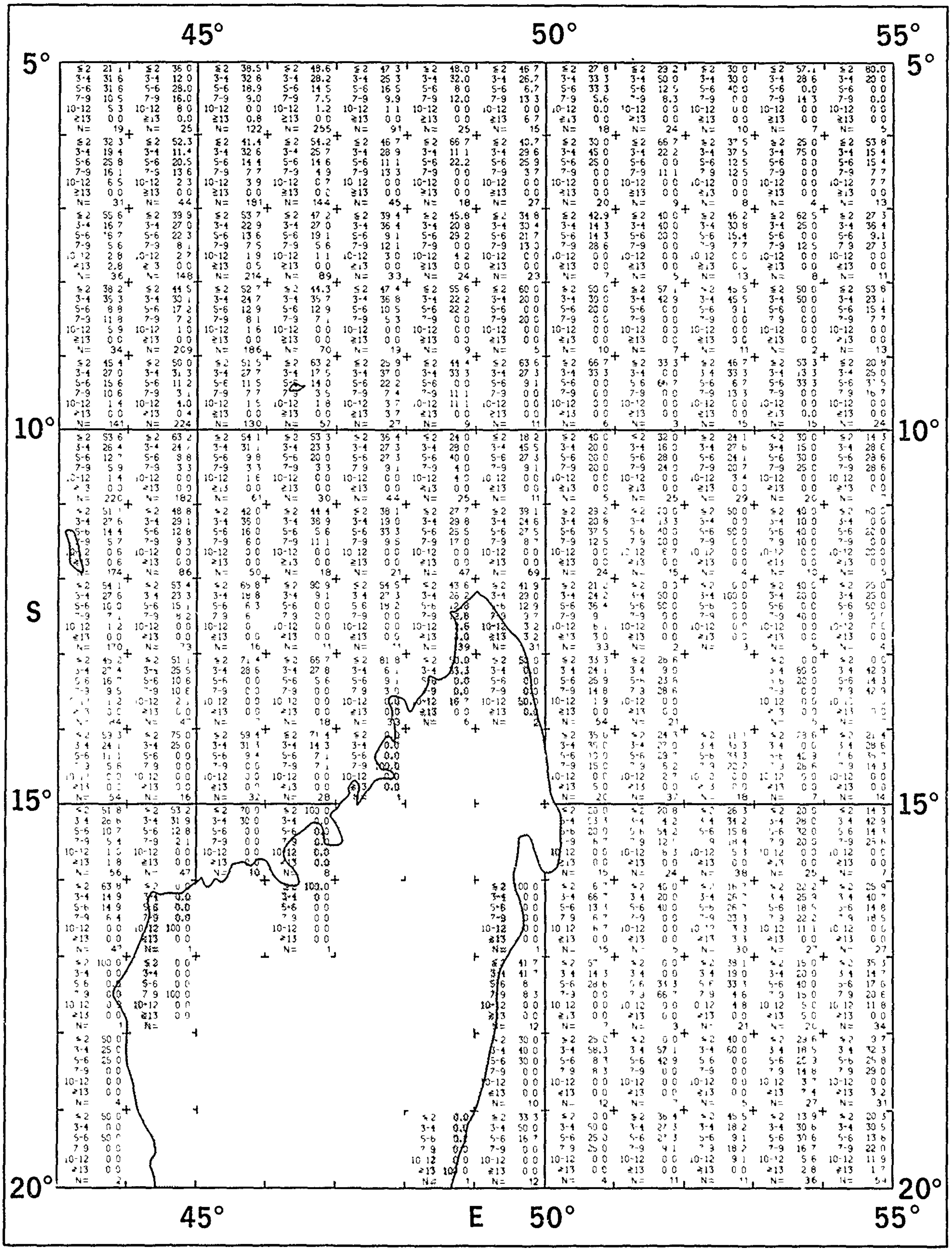

45°
50°
55°
20°
25°
S
30°
35°
E


AIR AND
SEA TEMPERATURE
SOLID LINE - MEAN
AIR TEMPERATURE (° F)
DASHED LINE - MEAN SEA
SURFACE TEMPERATURE (° F)
E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
82
81
80
79
78
77
76
75
74
73
72
71
70
69
68
67
66


E 35° 40° 45° 50° 55°
5° 10° 15° 20° 25° 30° S 35°
WAVE HEIGHTS
PERCENT FREQUENCY OF:
SOLID LINE - WAVE HEIGHT ≥ 3 FEET
DASHED LINE - WAVE HEIGHT ≥ 8 FEET
THE WAVE HEIGHT USED FOR THIS MAP IS THE HIGHER OF SEA OR SWELL FOR OBSERVATIONS CONTAINING BOTH WAVE TRAINS. SEA IS DEFINED AS WAVES GENERATED BY LOCAL WINDS.
≥ 3 FEET = ≥ CODE 2 (2 HALF METERS)
≥ 8 FEET = ≥ CODE 5 (5 HALF METERS)
70
60
60
70
60
50
40
70
80
50
70
60
70
80
80
90
90
90

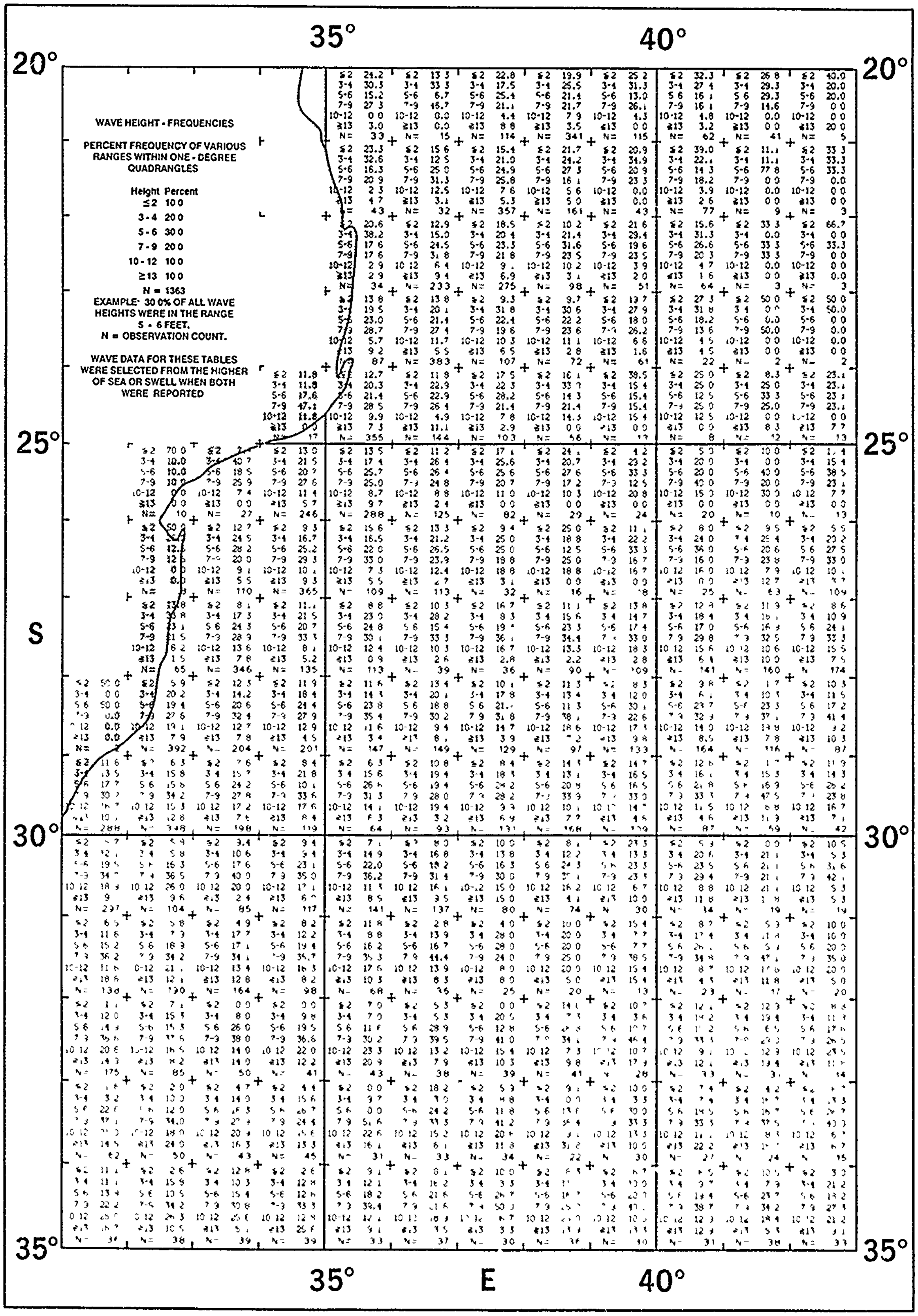

35° 40°
5° 5°
10° 10°
15° 15°
20° 20°
S
35° E 40°
WAVE HEIGHT - FREQUENCIES
PERCENT FREQUENCY OF VARIOUS RANGES WITHIN ONE - DEGREE QUADRANGLES
Height Percent
≤2 10.0
3-4 20.0
5-6 30.0
7-9 20.0
10-12 10.0
≥13 10.0
N = 1363
EXAMPLE 30.0% OF ALL WAVE HEIGHTS WERE IN THE RANGE 5 - 6 FEET
N = OBSERVATION COUNT
WAVE DATA FOR THESE TABLES WERE SELECTED FROM THE HIGHER OF SEA OR SWELL WHEN BOTH WERE REPORTED

December | Wave Height



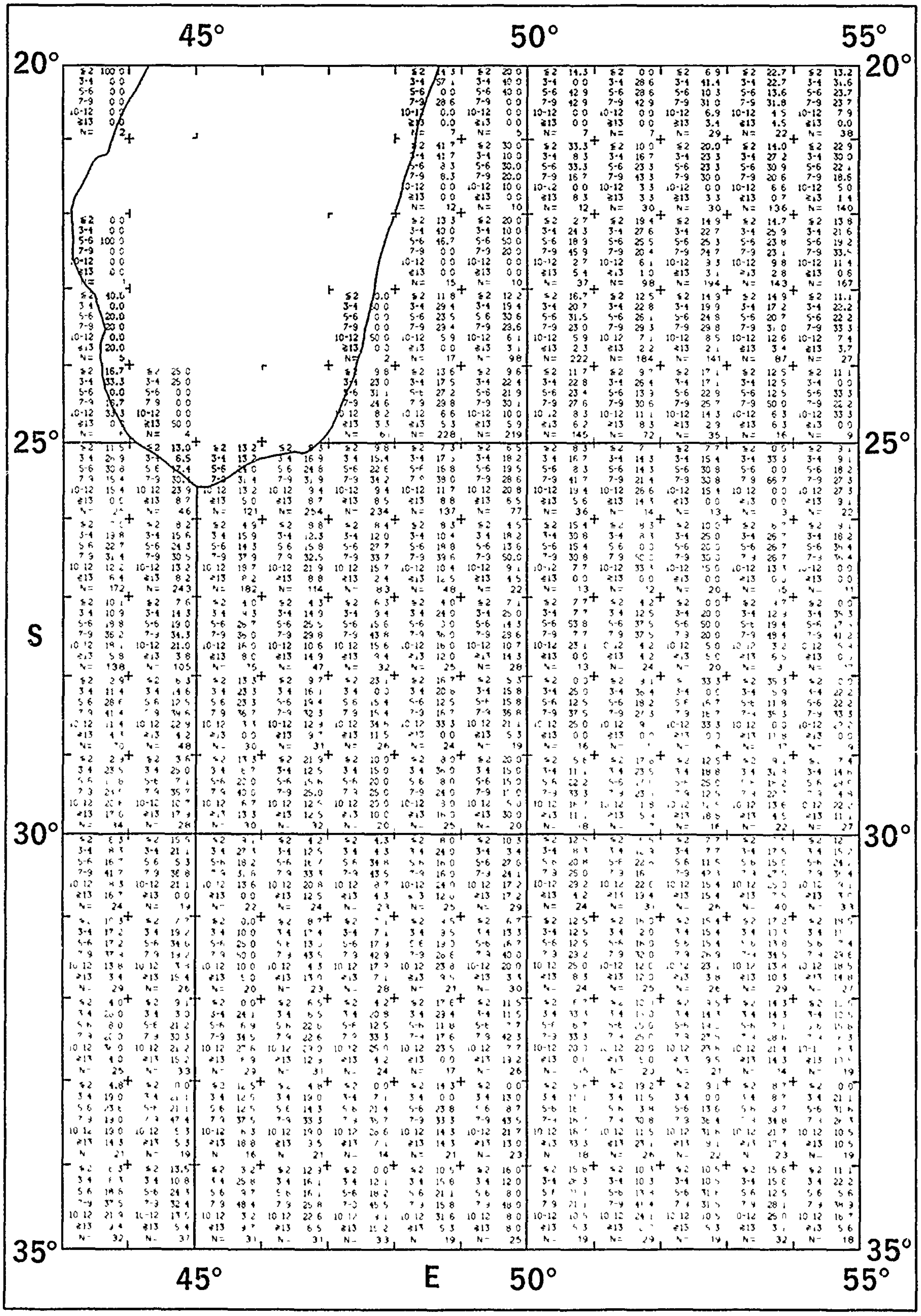
December

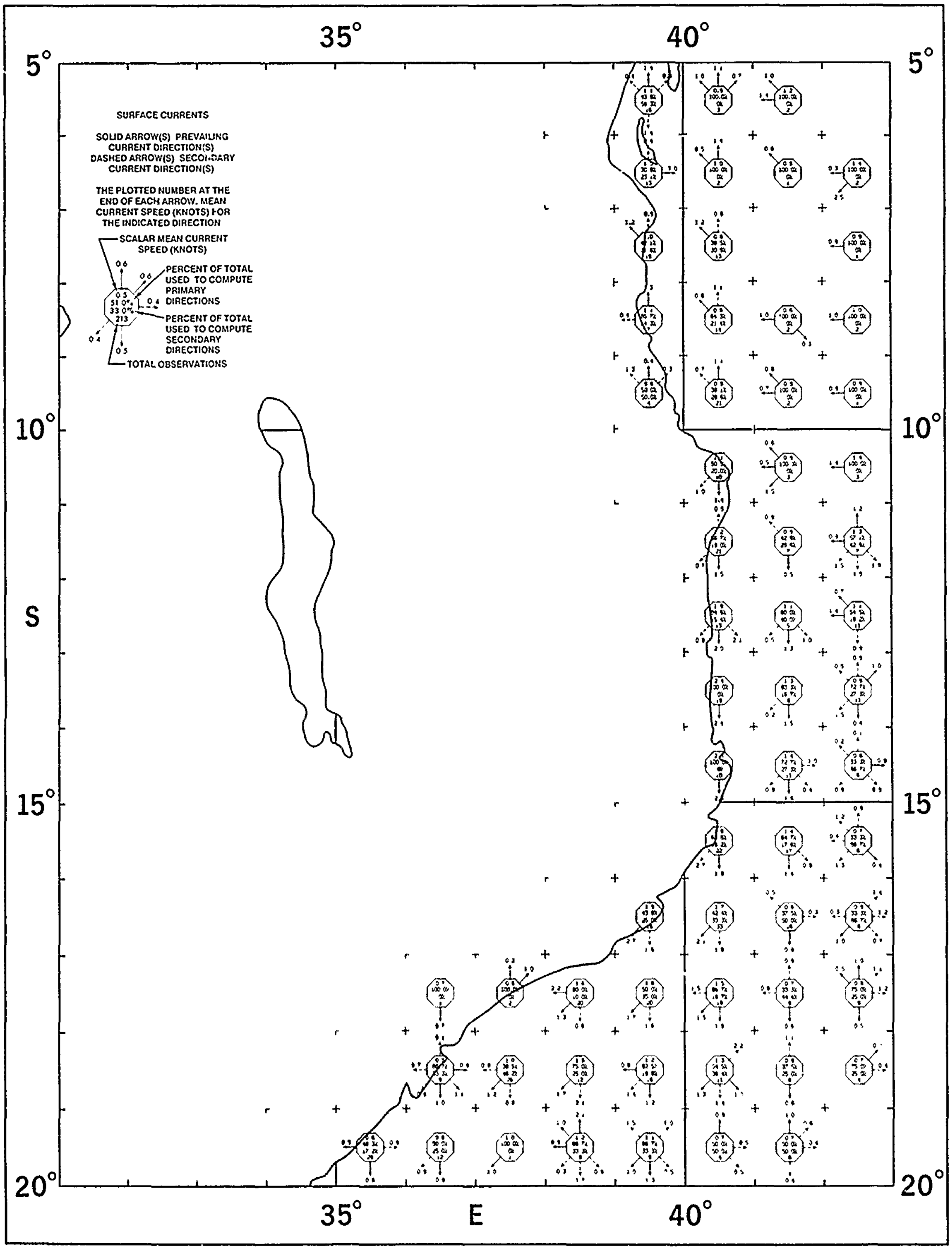
Wave Height



December

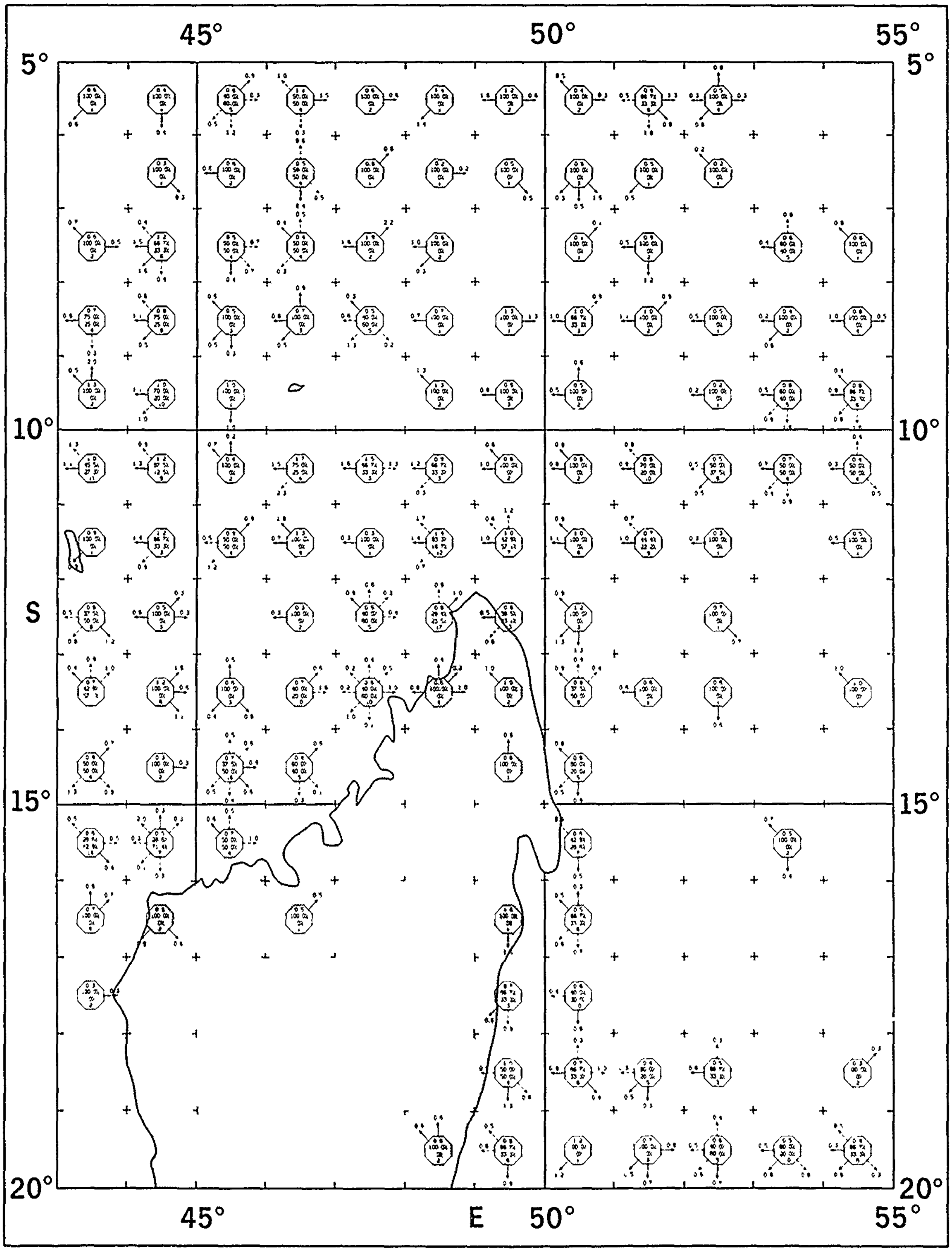
Wave Height

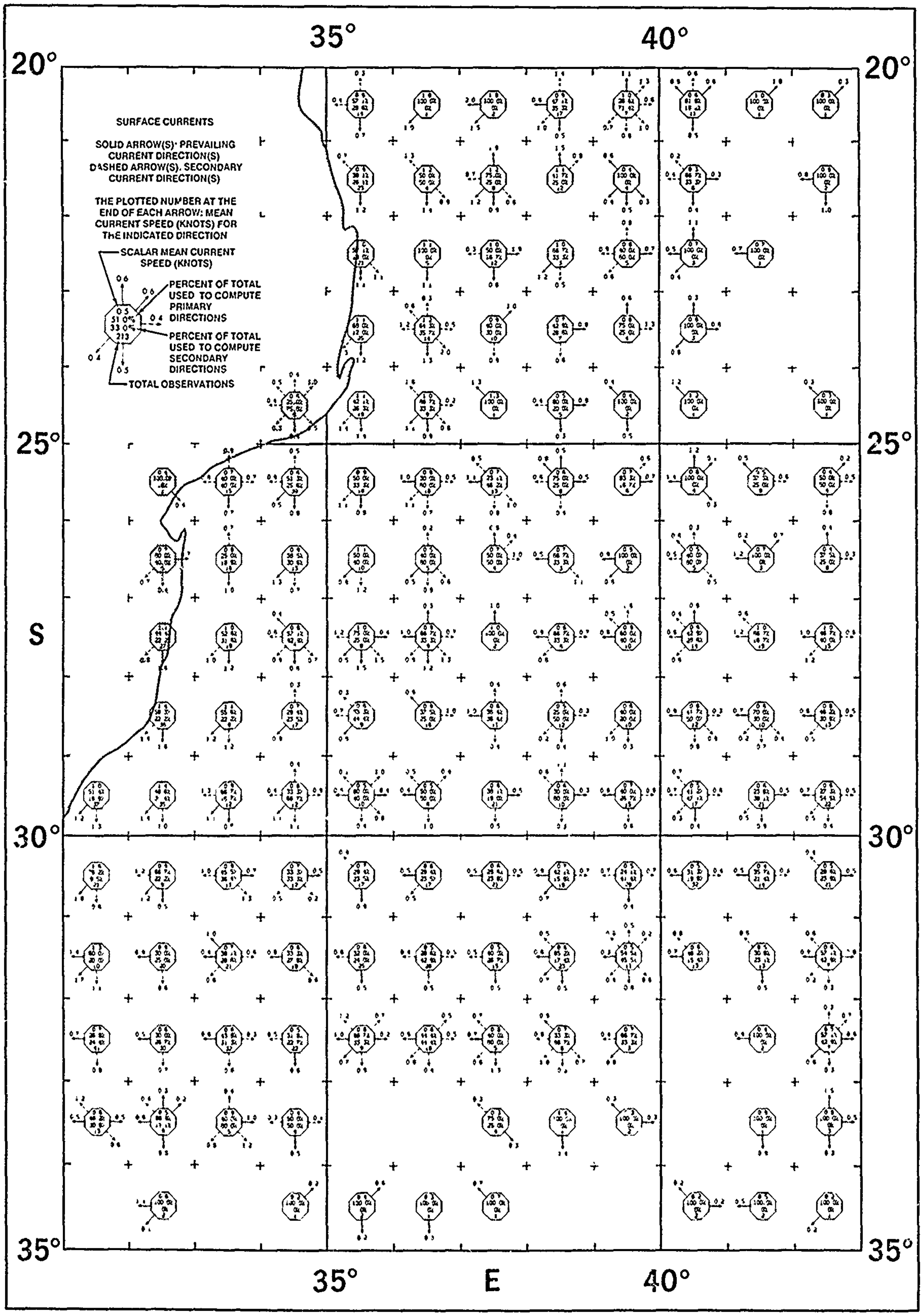


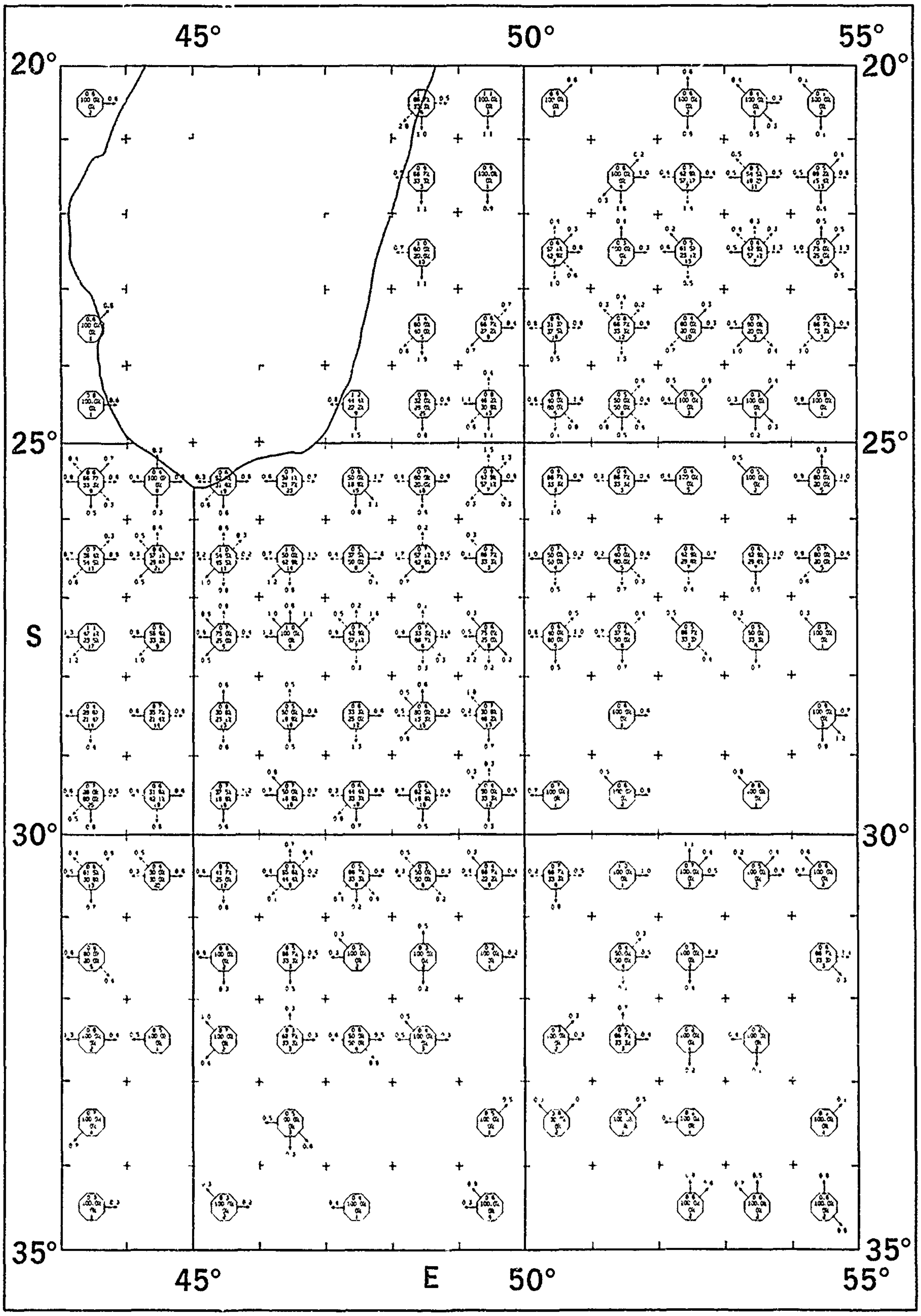

SURFACE CURRENTS
SOLID ARROW(S) PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S) SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW. MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS
35°
40°
5°
10°
15°
20°
S
E

December

Surface Currents




35°
40°
20°
25°
S
30°
35°
E
SURFACE CURRENTS
SOLID ARROW(S): PREVAILING CURRENT DIRECTION(S)
DASHED ARROW(S): SECONDARY CURRENT DIRECTION(S)
THE PLOTTED NUMBER AT THE END OF EACH ARROW: MEAN CURRENT SPEED (KNOTS) FOR THE INDICATED DIRECTION
SCALAR MEAN CURRENT SPEED (KNOTS)
PERCENT OF TOTAL USED TO COMPUTE PRIMARY DIRECTIONS
PERCENT OF TOTAL USED TO COMPUTE SECONDARY DIRECTIONS
TOTAL OBSERVATIONS


45°
50°
55°
20°
25°
30°
35°
S
E

Station Climatic Summaries

The following Station Climatic Summaries are based on data from many different sources, with most stations having variable periods-of-record. Considerable effort went into making these data as compatible as possible for each station. However, for some stations a more recent shorter period-of-record was selected over a longer period because the shorter record is more representative of the current climate. Also, in some instances, the station periods-of-record were mixed because only one period-of-record source could be found for a given element. For example, the mean daily maximum and minimum temperatures for a given station may have been based on a period other than that for the mean temperature because of incomplete data records. This practice sometimes gives inconsistencies in the summarized data set.

Station relocations and varying periods-of-record also introduce inconsistencies. For example, inconsistencies often appear when comparing absolute maximum temperatures from one period-of-record with the total number of days above a given threshold from another period.

Ideally, these Station Climatic Summaries should be generated from a relatively consistent long-term digital station data base. Unfortunately, that is not possible for most foreign-reporting stations at this time.

Station summaries were sorted into a rough geographical sort for Tanzania, Mozambique and Madagascar and appear in the following order:

PREPARED BY: NOCD ASHEVILLE   STATION NAME: TANGA, TANZANIA   ELEVATION: 115 FEET   WMO #: 63844
LOCATION: 05 05S 39 04E

	TEMPERATURE (F) MEANS			TEMPERATURE (F) EXTREME		PRECIPITATION (INCHES)				RELATIVE HUMIDITY		DEW POINT (F)	SURFACE WINDS (KTS) 0900 LST		SURFACE WINDS (KTS) 1500 LST		MEAN CLOUD AMOUNT (OKTAS)		MEAN NUMBER OF DAYS WITH PRECIPITATION					MEAN NUMBER OF DAYS WITH TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	0900 LST	1500 LST		DIRECTION	SPEED	DIRECTION	SPEED	0900 LST	1500 LST	≥ 0 008		SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG				
JAN	89	75	82	95	69	1 1	3 8	#	2 0	77	69	75	NE	5	NE	11	5	3	5		0	0					
FEB	90	75	83	97	69	1 3	5 1	#	5 1	77	67	74	NE	4	NE	10	4	3	4		0	1					
MAR	91	75	83	96	69	3 9	7 7	1 1	2 1	79	66	75	NE	3	SE	9	4	4	4		0	#					
APR	87	74	81	98	68	9 8	17 7	2 5	4 7	84	72	75	S	4	S	7	5	5	16		0	3					
MAY	85	72	79	93	67	11 0	26 9	1 6	6 3	85	71	72	SW	4	S	7	5	5	16		0	#					
JUN	84	70	77	89	61	2 8	5 2	0 4	1 8	82	67	69	S	3	S	9	4	4	13		0	0					
JUL	83	69	76	87	59	2 7	8 1	0 5	2 2	83	67	69	S	4	S	8	4	5	12		0	0					
AUG	83	68	75	87	60	3 1	7 5	[illegible]	2 0	84	68	68	S	3	S	7	4	4	13		0	0					
SEP	84	69	76	87	62	3 4	10 8	1 1	7 3	82	66	69	S	3	SE	9	5	4	13		0	0					
OCT	86	71	78	92	64	4 1	12 5	1 3	2 7	81	67	70	SE	3	SE	11	6	3	14		0	#					
NOV	87	73	80	93	66	5 6	17 8	0 2	6 5	80	69	74	SE	3	SE	10	5	3	12		0	0					
DEC	89	74	82	94	70	3 5	8 9	0 1	3 3	78	70	76	NE	5	NE	12	4	3	8		0	1					
ANN	86	72	79	98	59	52 2	79 4	32 1	7 3	81	68	72	S	3	SE	9	5	4	134		0	3					
EYR	29	28	28	22	22	29	13	13	13	29	28	10	17		17	14	14	14	15		21	8					

LESS THAN 0 5 DAYS, 0 5 OR 0 05 INCH, OR 0 5 PERCENT AS APPLICABLE
THE VALUE LISTED UNDER PRESSURE ALTITUDE INDICATES THAT VALUE IS EXCEEDED ONLY 0 05 % OF THE TIME WHEN
LABELED 99 95% OTHERWISE IT IS THE MEAN
EYR IS EQUIVALENT YEARS OF RECORD (I E THE ACTUAL NUMBER OF YEARS UTILIZED IN THE CACULATIONS)

TANGA, TANZANIA

PREPARED BY: NOCD ASHEVILLE   STATION NAME: DAR ES SALAAM, TANZANIA   ELEVATION: 190 FEET   WMO #: 63894
LOCATION: 06 53S 39 12E

	TEMPERATURE (F) MEANS			TEMPERATURE (F) EXTREME		PRECIPITATION (INCHES)				RELATIVE HUMIDITY		DEW POINT (F)		SURFACE WINDS (KTS) DIRECTION	SURFACE WINDS (KTS) SPEED		MEAN CLOUD AMOUNT (OKTAS)	MEAN NUMBER OF DAYS WITH PRECIPITATION					MEAN NUMBER OF DAYS WITH TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	08? LST	1430 LST	0900 LST	1500 LST		0900 LST	1500 LST		≥ 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY < 5/8 MI IN FOG	> 90		< 32	
JAN	88	76	82	95	65	2 4	10 2	#	2 4	81	69	75	75	NE	7	9	5	6			4	#				
FEB	89	75	82	95	65	3 3	* 9	#	3 5	82	68	75	75	NE	5	8	5	6			5	#				
MAR	89	74	82	95	67	4 5	17 6	0 5	3 7	84	70	75	77	NE	3	6	5	7			11	#				
APR	87	73	80	95	67	11 3	20 7	1 7	5 4	89	75	75	75	S	3	4	6	16			7	#				
MAY	86	71	78	91	61	7 2	23 6	#	3 7	87	66	72	72	S	3	6	5	12			1	#				
JUN	85	67	76	91	58	1 2	6 3	#	2 3	86	60	70	68	S	4	7	4	4			#	0				
JUL	84	66	75	89	57	1 1	8 7	#	2 2	87	58	68	66	S	4	8	5	7			0	0				
AUG	84	65	75	89	55	1 0	4 3	#	1 8	86	57	68	66	S	3	7	4	5			#	#				
SEP	86	66	76	93	58	1 3	2 8	#	1 8	81	58	70	68	SE	3	10	4	7			0	#				
OCT	87	68	77	93	60	2 4	9 3	0 1	3 0	77	61	72	70	E	2	10	4	5			#	#				
NOV	87	71	79	93	64	4 1	13 0	0 2	5 0	78	66	73	73	E	3	9	4	7			2	0				
DEC	88	74	81	94	66	3 7	11 2	#	3 4	80	69	75	75	NE	3	8	5	8			6	#				
ANN	87	70	79	95	55	43 5	60 3	17 2	5 4	83	65	72	72	S	4	8	5	84			36	1				
EYR	30	30	30	22	22	30	70	70	22	30	30	14	14	14	14	14	14	70			10	14				

LESS THAN 0 5 DAYS, 0 5 OR 0 05 INCH, OR 0 5 PERCENT AS APPLICABLE
THE VALUE LISTED UNDER PRESSURE ALTITUDE INDICATES THAT VALUE IS EXCEEDED ONLY 0 05 % OF THE TIME WHEN
LABELED 99 95% OTHERWISE IT IS THE MEAN
EYR IS EQUIVALENT YEARS OF RECORD (I E THE ACTUAL NUMBER OF YEARS UTILIZED IN THE CACULATIONS)

DAR ES SALAAM, TANZANIA

PREPARED BY: NCDC ASHEVILLE   STATION NAME: MTWARA, TANZANIA   ELEVATION: 371 FEET   WMO #: 63971
LOCATION: 10 16S 40 11E

	TEMPERATURE (F) MEANS MAXIMUM	MINIMUM	AVERAGE	EXTREME MAXIMUM	EXTREME MINIMUM	PRECIPITATION (INCHES) MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	RELATIVE HUMIDITY 0900 LST	1500 LST	DEW POINT (F) 0900 LST	1500 LST	SURFACE WINDS (KTS) DIRECTION	SPEED 0900 LST	SPEED 1500 LST	MEAN CLOUD AMOUNT (OKTAS) 0900 LST	1500 LST	MEAN NUMBER OF DAYS WITH PRECIPITATION >= 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY <= 5/8 MI IN FOG	TEMPERATURE			
JAN	86	73	80	92	66	8 6	21 3	2 0	7 9	85	75	75	73	N	7	11	7	6	13			7	0				
FEB	86	73	80	92	68	5 9	17 8	0 7	6 7	87	76	75	75	N	6	10	7	6	12			12	0				
MAR	87	73	80	92	68	6 5	9 2	4 1	3 3	86	75	75	75	N	7	8	6	6	12			15	0				
APR	87	72	79	92	66	7 8	16 4	0 6	6 0	87	74	75	73	SE	9	9	5	6	14			8	0				
MAY	86	69	77	90	56	2 0	4 8	0 3	4 3	82	64	72	70	S	12	11	4	6	5			1	0				
JUN	84	66	75	87	55	0 4	2 2	0 0	1 8	81	60	68	66	SE	13	12	4	5	2			0	0				
JUL	84	65	74	88	54	0 6	2 0	0 0	1 0	83	58	66	64	SE	13	13	4	6	3			0	0				
AUG	85	65	75	89	59	0 4	1 7	0 1	0 9	83	57	68	66	SE	11	13	4	6	3			#	0				
SEP	86	66	76	91	59	2 6	18 4	0 2	3 6	79	59	70	66	NE	7	13	5	6	3			0	0				
OCT	86	68	77	92	60	0 9	2 6	0 3	1 2	74	62	70	68	NE	7	13	6	5	4			#	#				
NOV	88	71	80	94	63	1 3	4 7	#	1 5	75	65	73	72	NE	6	12	6	5	5			2	0				
DEC	87	74	80	92	69	8 6	17 4	0 2	7 2	80	71	73	73	N	7	11	6	6	8			9	0				
ANN	86	70	77	94	54	45 6	59 2	30 7	7 9	81	66	72	70	NE	9	11	5	6	84			53	#				
EYR	10	10	10	10	10	13	13	13	13	13	13	6	6	13	13	13	10	10	13			10	10				

LESS THAN 0 5 DAYS, 0 5 OR 0 05 INCH, OR 0 5 PERCENT AS APPLICABLE
THE VALUE LISTED UNDER PRESSURE ALTITUDE INDICATES THAT VALUE IS EXCEEDED ONLY 0 05 % OF THE TIME WHEN
LABELED 99 95% OTHERWISE IT IS THE MEAN
EYR IS EQUIVALENT YEARS OF RECORD (I E THE ACTUAL NUMBER OF YEARS UTILIZED IN THE CACULATIONS)

MTWARA, TANZANIA

PREPARED BY: NCDC ASHEVILLE   STATION NAME: PORTO AMELIA, MOZAMBIQUE   ELEVATION: 161 FEET   WMO #: 67215
LOCATION: 12 59S 40 30E

	TEMPERATURE (F) MEANS MAXIMUM	MINIMUM	AVERAGE	EXTREME MAXIMUM	EXTREME MINIMUM	PRECIPITATION (INCHES) MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	SNOWFALL MEAN	MAXIMUM	24-HR MAXIMUM	RELATIVE HUMIDITY 0930 LST	1530 LST	VAPOR PRESSURE INCHES OF MERCURY	DEW POINT (F)	PRESSURE ALTITUDE FEET (MEAN)	SURFACE WIND (KTS) DIRECTION	SPEED	MAX GUST	MEAN CLOUD AMOUNT (TENTHS)	MEAN NUMBER OF DAYS WITH PRECIPITATION >= 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG	TEMPERATURE			
JAN	88	75	82	96	69	6 1	12 0	2 [illegible]	3 7				77	74				E	1		7	15		0	19	#				
FEB	88	75	82	96	68	6 5	11 [illegible]	2 7	6 9				81	75				E	1		7	15		0	16	#				
MAR	89	75	82	97	68	7 6	19 3	1 [illegible]	6 3				80	71				SE	1		7	16		0	15	1				
APR	88	74	81	93	66	5 0	14 7	1 7	4 4				78	68				SE	2		6	12		0	8	#				
MAY	87	71	79	92	64	0 9	3 3	0 1	1 1				73	62				SE	2		5	6		0	2	#				
JUN	84	68	76	90	58	0 6	4 1	0 0	1 7				72	61				[illegible]	1		4	4		0	0	1				
JUL	84	67	75	89	60	0 6	3 0	0 0	1 5				69	59				SE	3		4	4		0	2	1				
AUG	84	68	76	91	62	0 2	1 3	0 0	1 1				63	60				SE	3		4	2		0	2	0				
SEP	86	70	78	92	66	0 2	0 9	0 0	0 6				67	60				SE	2		4	2		0	0	#				
OCT	87	73	80	93	66	0 4	1 7	0 0	1 6				67	64				SE	2		4	2		0	#	0				
NOV	88	76	82	96	69	1 3	9 5	0 0	1 7				67	67				E	2		4	5		0	1	0				
DEC	89	75	82	96	69	5 0	11 5	0 4	8 8				72	72				E	2		6	11		0	14	0				
ANN	87	72	79	97	58	34 5	57 8	21 3	8 8				71	66				SE	2		5	94		0	77	#				
EYR	23	23	23	23	23	23	23	23	23				20	20				6	6		6	15		6	7	6				

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EYR IS EQUIVALENT YEARS OF RECORD (I E THE ACTUAL NUMBER OF YEARS UTILIZED IN THE CACULATIONS)

PORTO AMELIA, MOZAMBIQUE

PREPARED BY: NCDC ASHEVILLE   STATION NAME: MOSSURIL, MOZAMBIQUE   ELEVATION: 49 FEET   WMO #: 67241
LOCATION: 14 57S 40 49E

	TEMPERATURE (F) MEANS			EXTREME		PRECIPITATION (INCHES)				RELATIVE HUMIDITY		DEW POINT (F)	SURFACE WINDS (KTS) DIRECTION	SPEED		MEAN CLOUD AMOUNT (OKTAS)		MEAN NUMBER OF DAYS WITH PRECIPITATION		SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG	TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	0930 LST	1530 LST			AM	PM	0900 LST	2100 LST	>= 0 04	>= 0 4				>= 77		<= 32	
JAN	91	75	83	100	67	6 5	18 6	3 7	7 9	70	67		NE	2	4	6	6	13	6	0	14	0	31		0	
FEB	91	74	83	104	66	7 1	18 4	1 6	5 0	70	68		VRB	2	4	6	5	11	5	0	13	0	28		0	
MAR	90	74	82	98	68	6 5	20 7	1 6	6 4	74	70		SW	2	3	6	4	11	4	0	10	0	31		0	
APR	88	72	81	96	63	3 9	15 3	0 3	3 9	75	68		SW	4	5	5	3	7	3	0	5	0	30		0	
MAY	86	66	77	95	60	0 8	5 5	0 0	1 5	73	64		SW	3	5	3	2	3	0	0	0	1	31		0	
JUN	83	65	74	90	53	1 3	5 6	0 3	3 5	74	65		SW	5	6	3	2	5	1	0	0	1	30		0	
JUL	82	64	73	89	53	1 1	2 1	0 1	1 5	74	63		SW	4	6	3	3	4	0	0	0	2	30		0	
AUG	83	64	73	92	55	0 5	2 9	0 0	1 7	71	61		SW	4	6	4	2	2	0	0	0	4	30		0	
SEP	86	66	76	94	58	0 3	1 9	0 0	1 8	66	61		SW	4	5	4	1	1	0	0	0	4	30		0	
OCT	89	69	79	99	58	0 3	3 0	0 0	1 9	60	60		NE	3	5	4	*	1	0	0	*	*	31		0	
NOV	91	73	82	99	66	1 5	4 0	0 0	3 0	62	62		NE	4	6	5	2	5	1	0	5	0	30		0	
DEC	91	75	83	102	68	5 3	14 3	0 8	4 3	65	65		NE	3	4	6	4	8	4	0	11	0	31		0	
ANN	87	70	79	104	53	37 2	48 1	25 6	7 9	69	65		SW	3	5	5	3	69	24	0	57	13	363		0	
EYR	28	28	28	26	28	28	25	25	28	18	18		30	23	23	15	15	30	30	30	30	30	30		30	

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MOSSURIL, MOZAMBIQUE

PREPARED BY: NCDC ASHEVILLE   STATION NAME: QUELIMANE, MOZAMBIQUE   ELEVATION: 20 FEET   WMO #: 67283
LOCATION: 17 53S 36 53E

	TEMPERATURE (F) MEANS			EXTREME		PRECIPITATION (INCHES)				SNOWFALL			RELATIVE HUMIDITY		VAPOR PRESSURE INCHES OF MERCURY	DEW POINT (F)	PRESSURE ALTITUDE FEET (MEAN)	SURFACE WIND (KTS)			MEAN CLOUD AMOUNT (TENTHS)	MEAN NUMBER OF DAYS WITH PRECIPITATION		SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG	TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	MEAN	MAXIMUM	24-HR MAXIMUM	LST	1530 LST				DIRECTION	SPEED	MAX GUST		0 004								
JAN	91	75	82	105	64	9 3	31 4	1 3	4 3				76	65				SSE				17		0	8	1				
FEB	91	75	80	102	67	10 1	24 4	0 8	9 3				77	68				SSE				15		0	8	2				
MAR	89	74	81	101	67	9 1	13 2	1 9	6 1				79	68				SSE				17		0	5	1				
APR	88	71	79	99	61	4 4	11 2	0 3	6 9				78	66				SE				12		0	4	2				
MAY	84	66	76	99	46	2 9	3 5	0 [illegible]	3 7				81	64				S				12		0	0	4				
JUN	81	62	70	[illegible]	47	2 4	8 4	0 3	2 7				84	65				S				10		0	0	3				
JUL	80	61	70	93	51	2 0	5 4	0 1	2 1				84	64				SSE				11		0	0	4				
AUG	82	62	72	99	51	1 4	3 1	0 4	1 4				78	61				S				7		0	0	4				
SEP	86	66	75	102	55	0 6	3 1	0 0	1 4				69	61				E				4		0	0	3				
OCT	90	70	79	109	55	0 6	4 8	0 0	0 8				61	60				SE				4		0	0	2				
NOV	91	73	80	109	60	3 2	8 6	0 0	7 4				64	64				E				7		0	5	*				
DEC	91	74	81	106	63	6 7	23 9	1 0	6 7				70	66				SSE				13		0	9	*				
ANN	87	69	79	109	47	49 [illegible]	45 5	20 [illegible]	9 [illegible]				75	64				SSE				129		0	37	25				
EYR	30	30	45	30	30	45	45	15	30				20	20				22				15		30	30	10				

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QUELIMANE, MOZAMBIQUE

PREPARED BY: NOCD ASHEVILLE — STATION NAME: BEIRA, MOZAMBIQUE — LOCATION: 19 50S 34 51E — ELEVATION: 23 FEET — WMO #: 67297

	TEMPERATURE (F) MEANS			TEMPERATURE (F) EXTREME		PRECIPITATION (INCHES)				RELATIVE HUMIDITY		DEW POINT (F)	SURFACE WINDS (KTS) DIRECTION		SURFACE WINDS (KTS) SPEED	MEAN CLOUD AMOUNT (OKTAS)		MEAN NUMBER OF DAYS WITH PRECIPITATION			MEAN NUMBER OF DAYS WITH		MEAN NUMBER OF DAYS WITH TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	0930 LST	1530 LST		0900 LST	2100 LST		0900 LST	1500 LST	>= 0 04		SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG	>= 77		<= 32	
JAN	88	75	82	103	68	11 5	33 5	0 4	11 3	76	68	73	E	SE	8	6	4	12		0	6	0	31		0	
FEB	89	75	83	100	66	12 0	30 4	1 0	14 4	77	68	73	E	SE	8	6	3	12		0	4	0	28		0	
MAR	87	73	81	99	65	10 1	26.6	0 9	7 7	78	66	72	E	SE	8	5	3	12		0	5	0	31		0	
APR	86	71	78	99	61	4 4	13 1	1 0	7 2	77	65	70	E	S	7	4	2	7		0	2	1	30		0	
MAY	82	65	74	98	56	2 4	7 5	0 1	4 0	79	64	64	SE	S	7	3	2	6		0	#	2	29		0	
JUN	78	62	71	92	47	1 6	5 6	0 1	3 5	81	66	63	SE	S	7	3	1	5		0	#	5	18		0	
JUL	77	61	70	91	47	1 3	4 5	0 0	3 7	81	66	62	SE	SE	7	4	1	4		0	#	6	15		0	
AUG	79	62	71	94	53	1 2	5 2	0 0	2 6	79	67	63	E	SE	7	4	2	3		0	#	5	21		0	
SEP	82	65	75	103	54	0 9	4 3	0 0	2 5	72	66	66	E	SE	8	4	2	3		0	#	2	27		0	
OCT	85	69	78	107	56	1 2	5 7	0 0	3 7	68	66	69	E	SE	9	5	2	3		0	1	1	30		0	
NOV	87	72	80	109	61	5 3	21 5	0 2	8 6	70	67	70	E	SE	9	6	3	7		0	4	0	30		0	
DEC	88	73	82	106	63	4 7	30 7	1 5	5 9	72	68	71	E	SE	8	6	4	10		0	7	0	31		0	
ANN	84	69	77	109	47	50 7	90 1	32 3	14 4	76	66	68	E	SE	8	5	2	84		0	30	22	321		0	
EYR	30	30	57	30	30	57	57	57	30	20	20	35	30	30	30	30	30	30		39	20	30	30		30	

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BEIRA, MOZAMBIQUE

PREPARED BY: NOCD ASHEVILLE — STATION NAME: NOVA MAMBONE, MOZAMBIQUE — LOCATION: 20 59S 35 01E — ELEVATION: 13 FEET — WMO #: 67303

	TEMPERATURE (F) MEANS			TEMPERATURE (F) EXTREME		PRECIPITATION (INCHES)				PRECIPITATION (INCHES) SNOWFALL			RELATIVE HUMIDITY		VAPOR PRESSURE INCHES OF MERCURY	DEW POINT (F)	PRESSURE ALTITUDE FEET (MEAN)	SURFACE WIND (KTS)			MEAN CLOUD AMOUNT (TENTHS)	MEAN NUMBER OF DAYS WITH PRECIPITATION			MEAN NUMBER OF DAYS WITH		MEAN NUMBER OF DAYS WITH TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	MEAN	MAXIMUM	24-HR MAXIMUM	0930 LST	1530 LST				DIRECTION	SPEED	MAX GUST		>= 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY				
JAN	89	72	80	99	56	7 3			7 1				72	68								10								
FEB	89	72	81	99	57	6 7			8 3				74	69								12								
MAR	88	70	79	97	50	5 0			12 5				71	65								9								
APR	87	66	77	96	50	1 8			5 8				71	62								6								
MAY	84	60	72	94	43	1 2			2 3				72	61								4								
JUN	80	56	68	94	37	1 1			1 6				76	60								5								
JUL	80	56	68	90	41	0 8			2 6				74	58								5								
AUG	80	59	69	92	44	0 9			1 4				72	61								4								
SEP	83	62	72	95	49	0 5			2 1				66	62								3								
OCT	86	68	77	97	47	1 0			5 9				64	63								4								
NOV	87	71	79	103	54	2 6			4 3				65	63								5								
DEC	88	71	80	102	60	6 5			5 6				70	66								9								
ANN	85	65	75	103	37	35 3			12 5				71	63								76								
EYR	28	28	28	28	28	28			28				13	13								13								

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NOVA MAMBONE, MOZAMBIQUE

PREPARED BY: NCCD ASHEVILLE　　STATION NAME: VILANCULOS, MOZAMBIQUE　　ELEVATION: 66 FEET　　WMO #: 67315
LOCATION: 22 00S 35 19E

	TEMPERATURE (F) MEANS MAXIMUM	MEANS MINIMUM	MEANS AVERAGE	EXTREME MAXIMUM	EXTREME MINIMUM	PRECIPITATION (INCHES) MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	SNOWFALL MEAN	SNOWFALL MAXIMUM	SNOWFALL 24-HR MAXIMUM	RELATIVE HUMIDITY 0930 LST	RELATIVE HUMIDITY 1530 LST	VAPOR PRESSURE INCHES OF MERCURY	DEW POINT (F)	PRESSURE ALTITUDE FEET (MEAN)	SURFACE WIND (KTS) DIRECTION	SPEED	MAX GUST	MEAN CLOUD AMOUNT (TENTHS)	MEAN NUMBER OF DAYS WITH PRECIPITATION >= 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY	TEMPERATURE			
JAN	87	73	80	97	62	6 1			6 9				73	71								11								
FEB	88	73	81	97	62	7 1			12 8				74	70								10								
MAR	87	71	79	96	58	4 3			5 6				72	67								11								
APR	85	68	76	91	55	1 6			1 9				71	67								6								
MAY	82	62	72	95	49	1 2			2 4				73	66								7								
JUN	78	58	68	91	40	1 1			3 7				74	66								7								
JUL	78	57	67	86	45	0 6			1 1				74	64								8								
AUG	78	59	69	90	47	0 8			2 0				72	66								6								
SEP	80	64	72	90	51	0 8			3 0				68	67								4								
OCT	83	69	76	92	52	1 2			6 5				68	69								4								
NOV	85	72	78	97	55	2 9			10 2				68	69								6								
DEC	86	73	79	97	60	5 8			5 6				70	70								9								
ANN	83	67	75	97	40	33 5			12 8				71	68								89								
EYR	27	27	27	27	27	27			27				13	13								13								

LESS THAN 0 5 DAYS, 0 5 OR 0 05 INCH, OR 0 5 PERCENT AS APPLICABLE
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VILANCULOS, MOZAMBIQUE

PREPARED BY: NCCD ASHEVILLE　　STATION NAME: INHAMBANE, MOZAMBIQUE　　ELEVATION: 46 FEET　　WMO #: 67323
LOCATION: 23 52S 35 23E

	TEMPERATURE (F) MEANS MAXIMUM	MEANS MINIMUM	MEANS AVERAGE	EXTREME MAXIMUM	EXTREME MINIMUM	PRECIPITATION (INCHES) MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	SNOWFALL MEAN	SNOWFALL MAXIMUM	SNOWFALL 24-HR MAX MUM	RELATIVE HUMIDITY 0930 LST	RELATIVE HUMIDITY 1530 LST	DEW POINT (F)	SURFACE WIND (KTS) DIRECTION	SPEED	MAX GUST	MEAN CLOUD AMOUNT (TENTHS) 0900 LST	1500 LST	MEAN NUMBER OF DAYS WITH PRECIPITATION >= 0 04		SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG	TEMPERATURE	MAX > 77		MIN >= 68
JAN	88	74	82	97	64	6 0	17 2	0 2	5 6				70	[illegible]	67	SE	5	34	8	7	3		0	4	0		31		30
FEB	88	74	80	97	63	5 6	18 9	0 [illegible]	9 1				72	64	68	SE	6	51	8	7	[illegible]		0	2	0		29		28
MAR	87	72	79	98	63	3 9	15 2	0 5	6 7				71	62	68	SE	5	40	7	6	10		0	2	0		31		30
APR	85	70	75	94	60	2 6	7 2	0 2	5 0				73	62	65	SE	4	40	6	6	7		0	2	0		29		22
MAY	81	65	73	92	54	2 2	9 2	0 2	4 9				77	62	62	SSW	4	40	[illegible]	5	6		0	2	1		28		6
JUN	78	62	68	91	48	2 2	8 2	0 2	6 6				80	62	5[illegible]	SSW	4	47	4	[illegible]	6		0	1	1		19		0
JUL	78	61	68	89	50	1 4	8 2	0 0	3 5				79	61	58	SSW	4	40	4	5	6		0	1	2		16		0
AUG	78	62	69	90	50	1 2	6 3	0 0	7 7				76	62	58	NE	4	37	[illegible]	5	4		0	1	1		20		1
SEP	81	65	72	94	54	1 0	5 9	0 0	7 7				70	64	5[illegible]	NE	[illegible]	[illegible]4	6	5	3		0	1	1		29		6
OCT	83	68	74	93	57	1 4	3 3	0 0	1 8				66	6[illegible]	61	NE	6	44	6	[illegible]	3		0	1	1		29		[illegible]7
NOV	85	70	76	99	59	3 0	10 8	0 4	6 8				67	6[illegible]	63	NE	6	34	7	6	6		0	1	0		2[illegible]		23
DEC	86	72	79	98	63	5 8	21 4	0 6	9 5				68	[illegible]	65	NE	[illegible]	50	7	6	8		0	4	0		31		28
ANN	83	68	74	99	48	36 5	65 4	17 6	[illegible]				73	63	61	NE	5	54	6	6	77		0	24	7		[illegible]		191
EYR	30	30	40	30	30	30	4	40	30				20	20	21	21	21	20	30	30	30		21	30	30		30		30

LESS THAN 0 5 DAYS, 0 5 OR 0 05 INCH, OR 0 5 PERCENT AS APPLICABLE
THE VALUE LISTED UNDER PRESSURE ALTITUDE INDICATES THAT VALUE IS EXCEEDED ONLY 0 05 % OF THE TIME WHENL
LABELED 99 95% OTHERWISE IT IS THE MEAN
EYR IS EQUIVALENT YEARS OF RECORD (I E THE ACTUAL NUMBER OF YEARS UTILIZED IN THE CACULATIONS)

INHAMBANE, MOZAMBIQUE

PREPARED BY: NOCD ASHEVILLE STATION NAME: MAPUTO, MOZAMBIQUE ELEVATION: 197 FEET WMO #: 67339
LOCATION: 25 55S 32 36E

	TEMPERATURE (F) MEANS MAXIMUM	MEANS MINIMUM	MEANS AVERAGE	EXTREME MAXIMUM	EXTREME MINIMUM	PRECIPITATION (INCHES) MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	RELATIVE HUMIDITY 0900 LST	1500 LST	VAPOR PRESSURE INCHES OF MERCURY	DEW POINT (F)	SURFACE WIND (KTS) DIRECTION	SPEED	MAX GUST	MEAN CLOUD AMOUNT (TENTHS) 0900 LST	2100 LST	MEAN NUMBER OF DAYS WITH PRECIPITATION >= 0 04	SNOWFALL	THUNDERSTORMS	VISIBILITY < 7 MI IN FOG	TEMPERATURE >= 78	<= 32
JAN	86	71	78	108	62	5 5	28 6	0 5	9 3	73	68		69	E	10	35	7	5	9	0	5	0	30	0
FEB	86	71	79	105	63	5 4	16 5	0 3	7 5	75	68		69	E	9	32	7	5	8	0	3	0	28	0
MAR	84	70	78	105	59	4 1	22 1	0 1	5 0	75	67		68	E	9	42	6	4	9	0	3	0	30	0
APR	83	67	75	103	57	2 3	14 0	0 1	6 3	75	66		65	E	8	34	5	3	6	0	3	1	28	0
MAY	80	62	70	101	51	1 2	5 8	0 0	2 7	73	63		60	NE	8	33	4	2	3	0	2	2	23	0
JUN	76	57	66	94	45	0 8	9 8	0 0	6 5	72	60		55	NE	8	30	3	2	2	0	1	4	12	0
JUL	76	57	66	94	47	0 6	6 9	0 0	5 8	72	61		55	NE	9	30	3	2	2	0	1	3	11	0
AUG	78	59	67	100	48	0 6	3 0	0 0	1 6	70	62		57	NE	9	39	4	2	2	0	1	2	15	0
SEP	79	62	70	109	49	1 1	5 5	0 0	3 9	69	66		59	E	10	35	7	3	4	0	3	1	18	0
OCT	81	65	73	113	53	2 1	7 4	0 2	2 8	70	70		62	E	11	48	7	5	6	0	4	0	23	0
NOV	82	68	75	111	57	3 2	14 9	0 4	7 9	71	70		65	E	10	34	7	6	8	0	5	0	26	0
DEC	85	70	78	112	59	3 7	9 6	0 4	3 4	71	69		66	E	10	35	7	6	8	0	6	0	29	0
ANN	81	65	73	113	45	30 8	56 1	14 4	9 3	72	66		63	E	9	48	5	4	67	0	34	13	273	0
EYR	30	30	61	30	30	61	61	61	30	20	20		10	30	30	31	30	30	30	42	31	30	30	42

* LESS THAN 0 5 DAYS, 0 5 OR 0 05 INCH, OR 0 5 PERCENT AS APPLICABLE
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LABELED 99 95% OTHERWISE IT IS THE MEAN
EYR IS EQUIVALENT YEARS OF RECORD (I E THE ACTUAL NUMBER OF YEARS UTILIZED IN THE CACULATIONS)

MAPUTO, MOZAMBIQUE

PREPARED BY: NOCD ASHEVILLE STATION NAME: MORONI, COMORO ELEVATION: 39 FEET WMO #: 67001
LOCATION: 11 42S 43 14E

	TEMPERATURE (F) MEANS MAXIMUM	MEANS MINIMUM	MEANS AVERAGE	EXTREME MAXIMUM	EXTREME MINIMUM	PRECIPITATION (INCHES) MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	SNOWFALL MEAN	SNOWFALL MAXIMUM	SNOWFALL 24-HR MAXIMUM	RELATIVE HUMIDITY	VAPOR PRESSURE INCHES OF MERCURY	DEW POINT (F)	PRESSURE ALTITUDE FEET (MEAN)	SURFACE WIND (KTS) DIRECTION	SPEED	MAX GUST	MEAN CLOUD AMOUNT (TENTHS)	MEAN NUMBER OF DAYS WITH PRECIPITATION >= 0 004	SNOWFALL	THUNDERSTORMS	VISIBILITY	TEMPERATURE
JAN	86	74	81	94	68	13 6	33 5	4 6	7 0												18				
FEB	87	74	80	93	68	12 2	32 6	4 7	7 5												17				
MAR	87	74	81	94	68	11 8	23 9	4 3	10 3												17				
APR	87	73	80	94	68	11 7	25 2	4 3	8 9												14				
MAY	85	71	78	92	63	9 2	11 2	0 5	14 8												13				
JUN	83	68	75	89	57	8 5	20 0	1 3	10 3												12				
JUL	82	66	74	88	57	7 6	31 4	0 3	10 6												12				
AUG	81	66	74	88	57	4 7	23 3	1 1	7 9												11				
SEP	82	67	75	88	59	4 6	6 5	1 4	3 3												11				
OCT	84	69	77	92	60	4 6	9 6	0 6	3 9												12				
NOV	87	71	79	94	65	4 0	13 5	0 8	5 7												12				
DEC	87	73	80	96	66	8 7	27 7	1 0	10 7												16				
ANN	85	71	78	96	57	100 1	126 5	53 7	14 8												170				
EYR	30	30	30	30	30	30	20	20	24												30				

* LESS THAN 0 5 DAYS, 0 5 OR 0 05 INCH, OR 0 5 PERCENT AS APPLICABLE
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MORONI, COMORO

PREPARED BY: NCDC ASHEVILLE   STATION NAME: DIEGO SUAREZ, MADAGASCAR   ELEVATION: 345 FEET   WMO # 67009
LOCATION: 12 21S 49 18E

	TEMPERATURE (F) MEANS MAXIMUM	MEANS MINIMUM	MEANS AVERAGE	EXTREME MAXIMUM	EXTREME MINIMUM	PRECIPITATION (INCHES) MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	SNOWFALL MEAN	SNOWFALL MAXIMUM	SNOWFALL 24-HR MAXIMUM	RELATIVE HUMIDITY 0730 LST	RELATIVE HUMIDITY 1230 LST	DEW POINT (F)	SURFACE WIND (KTS) DIRECTION	SPEED	MAX GUST	MEAN CLOUD AMOUNT (OKTAS) 0700 LST	1700 LST	MEAN NUMBER OF DAYS WITH PRECIPITATION > 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG	TEMPERATURE >= 90		TEMPERATURE <= 32	
JAN	88	75	81	96	68	11 0	20 4	3 7	9 1				84	70	75	W	8		6	6	20		0	16		13		0	
FEB	88	74	81	95	68	9 4	18 4	1 5	7 0				88	73	76	W	7		6	7	18		0	21		13		0	
MAR	89	75	82	96	69	6 0	34.8	1 1	20 0				86	70	75	E	8		5	6	14		0	18		13		0	
APR	89	75	82	96	66	2 2	7 7	0 0	3 8				80	63	72	ESE	10		4	5	7		0	2		13		0	
MAY	88	73	80	96	61	0 4	1 7	0 0	1 7				76	57	69	ESE	11		3	4	4		0	0		13		0	
JUN	86	70	78	93	61	0 5	1 4	0 0	0 9				76	55	65	ESE	12		3	4	4		0	0		9		0	
JUL	84	69	77	92	59	0 5	0 9	0 0	0 6				74	53	62	ESE	14		4	4	6		0	0		8		0	
AUG	84	69	77	93	58	0 6	1 7	0 0	1 5				72	53	62	ESE	15		4	4	5		0	0		8		0	
SEP	85	70	78	90	62	0 3	1 [illegible]	0 0	1 3				70	51	63	ESE	15		3	3	4		0	0		8		0	
OCT	87	71	79	93	65	0 4	2 4	0 0	1 0				68	50	67	ESE	16		3	3	5		0	0		11		0	
NOV	89	74	81	98	66	1 4	6 8	0 1	2 9				73	55	70	ESE	13		4	4	7		0	2		13		0	
DEC	89	75	82	97	68	5 8	19 3	0 2	10 0				80	64	73	E	9		5	5	13		0	8		16		0	
ANN	87	72	80	98	58	38 5	71 2	15 1	20 0				77	59	69	ESE	11				107		0	67		138		0	
EYR	27	27	27	27	27	30	30	30	30				6	6	14	9	9		16	16	27		10	14		11		27	

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DIEGO SUAREZ, MADAGASCAR

PREPARED BY: NCDC ASHEVILLE   STATION NAME: NOSSI-BE, MADAGASCAR   ELEVATION: 35 FEET   WMO #: 67012
LOCATION: 13 19S 48 19E

	TEMPERATURE (F) MEANS MAXIMUM	MEANS MINIMUM	MEANS AVERAGE	EXTREME MAXIMUM	EXTREME MINIMUM	PRECIPITATION (INCHES) MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	SNOWFALL MEAN	SNOWFALL MAXIMUM	SNOWFALL 24-HR MAXIMUM	RELATIVE HUMIDITY 0700 LST	RELATIVE HUMIDITY 1200 LST	DEW POINT (F)	SURFACE WIND (KTS) DIRECTION	SPEED	MAX GUST	MEAN CLOUD AMOUNT (OKTAS) 0700 LST	1700 LST	MEAN NUMBER OF DAYS WITH PRECIPITATION > 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG	TEMPERATURE			
JAN	87	73	80	92	68	17 0	39 4	7 0	10 8				94	75		W	4		6	6	23			12	0				
FEB	87	74	81	94	68	16 7	36 2	5 2	6 4				96	77		WSW	4		5	6	22			11	0				
MAR	88	74	81	95	69	10 7	25 9	4 6	4 7				96	73		WSW	3		5	6	20			13	1				
APR	88	73	81	93	66	5 9	15 2	0 7	6 0				96	71		NE	4		4	4	13			7	0				
MAY	87	71	79	92	59	2 4	9 1	0 5	2 0				96	66		NE	3		3	3	8			2	0				
JUN	85	67	76	91	58	1 8	6 3	0 2	2 2				95	62		NE	3		3	2	7			0	0				
JUL	84	66	75	90	56	1 4	3 4	0 0	2 1				97	59		NE	3		3	3	6			0	0				
AUG	84	66	75	93	57	1 8	4 6	0 2	2 7				94	57		NE	4		3	3	9			1	0				
SEP	86	68	77	[illegible]	58	1 7	5 9	0 1	3 5				87	53		NE	4		4	3	8			0	0				
OCT	88	70	79	96	59	3 1	9 1	0 2	3 0				79	52		NE	4		4	3	11			2	0				
NOV	89	72	81	94	65	6 6	14 8	0 5	2 5				80	59		NE	4		5	4	15			8	0				
DEC	88	73	81	96	68	14 6	37 0	5 7	5 4				90	7[illegible]		NE	3		5	5	21			16	0				
ANN	87	71	79	96	56	69 0	107 8	63 5	10 8				92	6[illegible]		NE	3		4	4	163			75	1				
EYR	27	27	27	27	27	27	18	18	18				6	6		9	9		16	16	27			10	10				

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EYR IS EQUIVALENT YEARS OF RECORD (I E THE ACTUAL NUMBER OF YEARS UTILIZED IN THE CACULATIONS)

NOSSI-BE, MADAGASCAR

PREPARED BY: NCDC ASHEVILLE STATION NAME: ANALALAVA, MADAGASCAR ELEVATION: 187 FEET WMO #: 67019
LOCATION: 14 38S 47 46E

	TEMPERATURE (F) MEANS MAXIMUM	MEANS MINIMUM	MEANS AVERAGE	EXTREME MAXIMUM	EXTREME MINIMUM	PRECIPITATION (INCHES) MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	SNOWFALL MEAN	SNOWFALL MAXIMUM	SNOWFALL 24-HR MAXIMUM	RELATIVE HUMIDITY 0700 LST	RELATIVE HUMIDITY 1200 LST	VAPOR PRESSURE INCHES OF MERCURY	DEW POINT (F)	PRESSURE ALTITUDE FEET (MEAN)	SURFACE WIND (KTS) DIRECTION	SPEED	MAX GUST	MEAN CLOUD AMOUNT (OKTAS)	MEAN NUMBER OF DAYS WITH PRECIPITATION >= 0.004		SNOWFALL	THUNDERSTORMS	VISIBILITY	TEMPERATURE			
JAN	87	73	80	97	67	18 3	56 5	4 5	9 0				86	69							6	21			22					
FEB	87	73	80	96	68	17 1	45 9	4 0	10 1				90	72							6	19			19					
MAR	88	74	81	97	68	6 9	28 5	1 7	7 6				85	63							4	16			18					
APR	90	73	82	96	67	3 5	11 4	0 0	3 5				79	54							4	6			10					
MAY	90	71	80	96	61	0 6	2 6	0 0	2 1				74	48							2	2			1					
JUN	87	68	78	94	59	0 2	4 0	0 0	4 0				73	45							2	1			0					
JUL	87	67	77	93	61	0 2	1 7	0 0	1 0				70	41							2	1			0					
AUG	88	67	78	94	61	0 2	0 9	0 0	0 9				65	39							2	1			0					
SEP	89	68	79	97	58	0 4	3 2	0 0	2 1				63	40							2	1			0					
OCT	90	71	80	99	60	2 6	8 9	0 0	3 2				61	45							2	5			3					
NOV	89	73	81	99	64	5 8	18 8	0 9	4 6				71	57							4	12			12					
DEC	88	73	81	97	67	12 2	25 0	5 0	8 7				84	66							5	18			21					
ANN	88	71	80	99	58	70 0	110 0	49 9	10 1				75	53							4	103			106					
EYR	27	27	27	27	27	51	51	51	51				6	6							16	27			27					

LESS THAN 0 5 DAYS, 0 5 OR 0 05 INCH, OR 0 5 PERCENT AS APPLICABLE
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ANALALAVA, MADAGASCAR

PREPARED BY: NCDC ASHEVILLE STATION NAME: ANTALAHA, MADAGASCAR ELEVATION: 79 FEET WMO #: 67025
LOCATION: 15 03S 50 20E

	TEMPERATURE (F) MEANS MAXIMUM	MEANS MINIMUM	MEANS AVERAGE	EXTREME MAXIMUM	EXTREME MINIMUM	PRECIPITATION (INCHES) MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	SNOWFALL MEAN	SNOWFALL MAXIMUM	SNOWFALL 24-HR MAXIMUM	RELATIVE HUMIDITY 0730 LST	RELATIVE HUMIDITY 1230 LST	VAPOR PRESSURE INCHES OF MERCURY	DEW POINT (F)	PRESSURE ALTITUDE FEET (MEAN)	SURFACE WIND (KTS) DIRECTION	SPEED	MAX GUST	MEAN CLOUD AMOUNT (OKTAS)	MEAN NUMBER OF DAYS WITH PRECIPITATION > 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY	TEMPERATURE			
JAN	86	73	79	94	67	11 9	19 1	3 4	8 3				90	73				E	5		6	19			12					
FEB	86	74	79	95	67	8 8	28 7	3 5	12 8				92	73				E	[illegible]		6	17			13					
MAR	86	73	79	92	67	10 3	25 0	2 1	7 3				93	75				SSE	5		6	19			19					
APR	84	71	78	92	64	9 5	34 3	2 4	7 4				92	73				SSE	7		6	18			11					
MAY	82	69	75	89	61	5 9	21 4	0 4	7 5				91	72				SSE	7		5	18			2					
JUN	79	66	73	86	57	6 4	14 4	2 4	3				92	72				SSE	7		5	20			0					
JUL	78	65	71	83	57	6 6	11 4	1 7	4 4				93	71				SSE	7		6	24			0					
AUG	78	65	71	85	57	6 9	17 6	0 7	3 1				91	71				SSE	7		5	23			3					
SEP	79	65	72	86	58	3 7	18 7	1 3	3 8				91	69				SSE	7		5	19			0					
OCT	81	67	74	87	59	2 3	8 0	1 3	3 8				88	69				SSE	7		5	16			3					
NOV	83	69	76	88	63	6 0	12 9	0 6	4 1				89	72				E	6		5	16			7					
DEC	85	71	78	94	64	8 4	18 8	1 0	5 1				88	72				E	5		6	18			15					
ANN	82	69	76	95	57	88	124 8	58 9	12 8				91	72				SSE	7		6	227			98					
EYR	26	27	27	26	27	30	30	30	21				6	6				14	14		10	27			10					

LESS THAN 0 5 DAYS, 0 5 OR 0 05 INCH, OR 0 5 PERCENT AS APPLICABLE
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ANTALAHA, MADAGASCAR

PREPARED BY: NOCD ASHEVILLE STATION NAME: MAJUNGA, MADAGASCAR ELEVATION: 72 FEET WMO #: 67027
LOCATION: 15 40S 46 21E

	TEMPERATURE (F) MEANS MAXIMUM	MEANS MINIMUM	MEANS AVERAGE	EXTREME MAXIMUM	EXTREME MINIMUM	PRECIPITATION (INCHES) MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	SNOWFALL MEAN	SNOWFALL MAXIMUM	SNOWFALL 24-HR MAXIMUM	RELATIVE HUMIDITY 0700 LST	RELATIVE HUMIDITY 1200 LST	VAPOR PRESSURE INCHES OF MERCURY	DEW POINT (F)	PRESSURE ALTITUDE FEET (MEAN)	SURFACE WIND (KTS) DIRECTION	SURFACE WIND SPEED	SURFACE WIND MAX GUST	MEAN CLOUD AMOUNT (OKTAS)	MEAN NUMBER OF DAYS WITH PRECIPITATION >= 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG	TEMPERATURE >= 90		<= 32	
JAN	88	75	81	99	64	17 2	44 3	5 8	10 8				89	69		75		NW	7		6	20		0	22	0	12		0	
FEB	88	75	81	97	69	13 9	30 6	1 2	7 4				91	72		76		NW	7		6	18		0	21	0	12		0	
MAR	89	75	82	96	68	9 5	40 7	1 8	14 3				89	64		76		E	7		6	15		0	21	0	15		0	
APR	91	74	82	97	64	2 1	9 3	0 0	2 4				85	55		72		E	6		3	4		0	11	0	15		0	
MAY	89	70	80	95	59	0 4	2 3	0 0	2 3				81	48		68		ESE	7		2	2		0	2	0	15		0	
JUN	87	67	77	93	57	0 1	1 6	0 0	1 3				82	46		64		ESE	7		2	1		0	0	0	12		0	
JUL	87	66	76	93	58	#	0 3	0 0	0 3				78	44		62		ESE	8		2	1		0	0	0	11		0	
AUG	88	67	78	95	59	0 1	0 6	0 0	0 6				72	40		62		ESE	8		2	1		0	0	0	13		0	
SEP	90	69	79	97	60	0 1	0 6	0 0	0 4				69	41		65		ESE	9		2	1		0	1	0	14		0	
OCT	91	72	81	97	63	0 9	4 6	0 0	2 2				65	45		69		NW	9		2	2		0	6	0	16		0	
NOV	90	75	82	100	64	4 7	10 8	0 4	3 3				75	57		73		NW	8		4	8		0	14	0	15		0	
DEC	89	75	82	98	68	9 7	17 2	2 4	8 1				85	66		75		NNW	7		5	15		0	22	0	15		0	
ANN	89	71	80	100	57	58 6	106 0	39 5	14 3				80	54		70		ESE	7		4	88		0	120	0	163		0	
EYR	27	27	27	27	27	30	30	30	21				6	6		21		9	9		10	27		22	10	26	22		27	

LESS THAN 0 5 DAYS, 0 5 OR 0 05 INCH, OR 0 5 PERCENT AS APPLICABLE
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MAJUNGA, MADAGASCAR

PREPARED BY: NOCD ASHEVILLE STATION NAME: BESALAMPY, MADAGASCAR ELEVATION: 118 FEET WMO #: 67037
LOCATION: 16 45S 44 29E

	TEMPERATURE (F) MEANS MAXIMUM	MEANS MINIMUM	MEANS AVERAGE	EXTREME MAXIMUM	EXTREME MINIMUM	PRECIPITATION (INCHES) MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	SNOWFALL MEAN	SNOWFALL MAXIMUM	SNOWFALL 24-HR MAXIMUM	RELATIVE HUMIDITY 0700 LST	RELATIVE HUMIDITY 1200 LST	VAPOR PRESSURE INCHES OF MERCURY	DEW POINT (F)	PRESSURE ALTITUDE FEET (MEAN)	SURFACE WIND (KTS) DIRECTION	SURFACE WIND SPEED	SURFACE WIND MAX GUST	MEAN CLOUD AMOUNT (TENTHS)	MEAN NUMBER OF DAYS WITH PRECIPITATION > 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY	TEMPERATURE			
JAN	89	73	81	96	66	17 0			14 9				91	69								18								
FEB	89	74	81	96	68	11 6			3 7				94	70								16								
MAR	90	73	81	96	62	8 1			4 9				94	64								14								
APR	92	72	82	97	63	1 6			1 5				93	56								5								
MAY	90	67	74	95	56	0 3			0 8				90	47								1								
JUN	88	63	76	95	52	0 1			0 [illegible]				90	42								1								
JUL	88	62	75	95	52	0 1			0 4				91	41								1								
AUG	89	64	76	96	53	0 1			0 2				87	36								1								
SEP	90	67	79	99	57	0 4			0 5				84	41								2								
OCT	92	70	81	101	54	0 6			0 7				78	46								2								
NOV	92	72	82	100	61	2 5			0 7				77	50								5								
DEC	91	73	82	100	67	7 8			8 1				86	61								11								
ANN	90	69	80	101	52	50 0			14 9				88	52								79								
EYR	27	27	27	27	27	27			6				6	6								27								

LESS THAN 0 5 DAYS, 0 5 OR 0 05 INCH, OR 0 5 PERCENT AS APPLICABLE
THE VALUE LISTED UNDER PRESSURE ALTITUDE INDICATES THAT VALUE IS EXCEEDED ONLY 0 05 % OF THE TIME WHEN
LABELED 99 95% OTHERWISE IT IS THE MEAN
EYR IS EQUIVALENT YEARS OF RECORD (I E THE ACTUAL NUMBER OF YEARS UTILIZED IN THE CACULATIONS)

BESALAMBY, MADAGASCAR

PREPARED BY: NOCD ASHEVILLE   STATION NAME: MAINTIRANO, MADAGASCAR   ELEVATION: 82 FEET   WMO #: 67073
LOCATION: 18 03S 44 02E

	TEMPERATURE (F)					PRECIPITATION (INCHES)							RELATIVE HUMIDITY		VAPOR PRESSURE INCHES OF MERCURY	DEW POINT (F)	PRESSURE ALTITUDE FEET (MEAN)	SURFACE WIND (KTS)			MEAN CLOUD AMOUNT (OKTAS)	MEAN NUMBER OF DAYS WITH								
	MEANS			EXTREME						SNOWFALL												PRECIPITATION					TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	MEAN	MAXIMUM	24-HR MAXIMUM	0700 LST	1200 LST				DIRECTION	SPEED	MAX GUST		>= 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY				
JAN	88	74	81	98	66	12 8	36 5	3 4	10 7				91	72				SW	7		6	18			16					
FEB	88	75	81	95	69	8 7	23 0	1 4	10 3				93	70				SW	6		6	15			16					
MAR	88	74	81	95	69	5 8	27 0	0 5	11 2				93	69				SW	7		5	13			13					
APR	88	73	81	96	65	1 1	8 0	0 0	2 4				92	62				SW	6		3	4			5					
MAY	85	69	77	93	55	0 3	2 1	0 0	1 4				89	57				SW	7		2	2			1					
JUN	82	65	73	90	52	0 1	1 2	0 0	1 0				87	54				SW	*		2	1			1					
JUL	81	64	73	91	48	0 1	1 2	0 0	1 1				88	53				SW	7		2	1			0					
AUG	82	66	74	95	51	0 2	1 5	0 0	0 7				89	54				SW	8		3	1			1					
SEP	85	68	77	94	59	0 3	2 8	0 0	2 4				89	57				W	8		2	2			1					
OCT	87	71	79	98	62	0 6	2 9	0 0	1 7				83	59				W	8		3	3			2					
NOV	89	73	81	98	63	2 3	9 7	0 0	4 6				79	61				W	8		4	6			8					
DEC	89	74	81	97	68	7 1	32 6	1 5	11 9				85	65				W	7		5	13			13					
ANN	86	71	78	98	48	39 4	95 6	17 9	11 9				88	61				SW	7		4	79			77					
EYR	27	27	27	27	27	30	30	30	30				6	6				14	14		10	27			4					

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EYR IS EQUIVALENT YEARS OF RECORD (I E THE ACTUAL NUMBER OF YEARS UTILIZED IN THE CACULATIONS)

MAINTIRANO, MADAGASCAR

PREPARED BY: NOCD ASHEVILLE   STATION NAME: TAMATAVE, MADAGASCAR   ELEVATION: 16 FEET   WMO #: 67095
LOCATION: 18 07S 49 24E

	TEMPERATURE (F)					PRECIPITATION (INCHES)				RELATIVE HUMIDITY		DEW POINT (F)	SURFACE WINDS (KTS)			MEAN CLOUD AMOUNT (OKTAS)		MEAN NUMBER OF DAYS WITH								
	MEANS			EXTREME									DIRECTION	SPEED				PRECIPITATION					TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	0730 LST	1230 LST			0700 LST	1400 LST	0730 LST	1300 LST	>= 0 01		SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG	>= 90		<= 32	
JAN	86	74	80	98	68	14 4	39 5	5 4	9 [illegible]	84	71		E	7	11	6	6	21		0	20		11		0	
FEB	86	74	80	95	68	15 9	41 9	4 8	9 7	82	71		ESE	8	11	6	5	20		0	18		10		0	
MAR	85	73	79	97	67	19 6	42 1	4 2	17 4	83	76			9	11	6	6	23		0	20		4		0	
APR	83	71	77	90	63	12 1	36 8	3 2	14 8	[illegible]	73		SSW	10	11	6	6	22		0	7		7		0	
MAY	80	68	74	86	54	10 4	39 0	4 3	6 1	83	74		SSW	10	14	6	6	21		0	1		0		0	
JUN	77	65	71	84	52	10 4	30 4	3 5	[illegible]	84	74		SSW	10	11	6	5	21		0	1		0		0	
JUL	76	64	70	8[illegible]	55	10 3	18 [illegible]	3 6	[illegible]	84	74		S	12	14	6	6	24		0	1		0		0	
AUG	76	64	70	82	55	8 3	18 1	2 7	5 3	84	73		E	10	11	6	6	24		0	1		0		0	
SEP	78	64	71	84	56	5 0	14 4	1 4	4 8	83	71		E	9	12	6	4	20		0	2		0		0	
OCT	80	66	[illegible]	87	59	[illegible]	[illegible]	0 6	4 1	80	71		E	7	12	6	4	17		0	11		0		0	
NOV	83	70	77	88	60	7 4	22 7	1 4	8 5	84	72		E	6	11	5	4	17		0	17		0		0	
DEC	85	74	79	95	63	11 4	20 4	2 1	6 3	84	73		E	7	1[illegible]	6	6	20		0	20		9		0	
ANN	81	69	75	98	52	129 5	133 4	14 4	17 4	82	73		E	9	1[illegible]	5	6	244		0	47		41		0	
EYR	27	27	27	27	27	30	30	30	30	6	6		12	20	20	23	23	27		20	10		20		20	

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TAMATAVE, MADAGASCAR

PREPARED BY: NOCD ASHEVILLE STATION NAME: MORONDAVA, MADAGASCAR ELEVATION: 26 FEET WMO #: 67117
LOCATION: 20 17S 44 19E

	TEMPERATURE (F)					PRECIPITATION (INCHES)							RELATIVE HUMIDITY		DEW POINT (F)	SURFACE WIND (KTS)		MEAN CLOUD AMOUNT (OKTAS)		MEAN NUMBER OF DAYS WITH								
	MEANS			EXTREME						SNOWFALL						DIRECTION				PRECIPITATION					TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	MEAN	MAXIMUM	24-HR MAXIMUM	0700 LST	1200 LST		0700 LST	1700 LST	0700 LST	1200 LST	>= 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG	> 90		< 32	
JAN	89	74	82	101	63	9 2	24 2	1 1	9 8				89	66	74	E	W	5	5	13		0	21	0	16		0	
FEB	89	74	82	100	67	6 9	33 2	0 9	12 3				92	67	74	NE	W	5	4	11		0	20	0	14		0	
MAR	89	73	81	99	61	5 1	14 0	0 2	5 1				92	63	72	SE	W	4	4	8		0	16	0	16		0	
APR	89	69	79	97	55	0 4	3 1	0 0	2 1				93	56	71	E	SW	2	2	2		0	4	2	15		0	
MAY	86	63	74	95	52	0 4	1.8	0 0	1 8				92	48	63	E	SW	2	2	1		0	1	3	11		0	
JUN	83	58	71	91	45	0 1	2 6	0 0	2 4				91	47	60	E	SW	2	1	2		0	0	5	7		0	
JUL	82	57	70	92	44	#	0 9	0 0	0 8				89	45	59	E	SW	2	1	1		0	0	3	6		0	
AUG	83	60	71	93	49	0 1	0 6	0 0	0 6				89	48	60	E	SW	2	1	1		0	1	9	7		0	
SEP	85	64	74	100	53	0 2	1 8	0 0	1 8				91	55	64	E	SW	2	1	1		0	1	3	9		0	
OCT	86	69	78	95	51	0 5	2 6	0 0	2 6				85	58	69	NE	SW	2	2	1		0	6	1	12		0	
NOV	88	72	80	99	61	1 0	2 7	0 0	1 6				82	60	70	NE	SW	4	3	3		0	13	0	14		0	
DEC	89	73	81	101	60	5 4	17 9	1 0	10 4				84	63	71	N	SW	4	4	9		0	21	0	16		0	
ANN	87	67	77	101	44	29 2	56 0	13 4	12 3				89	56	67	E	SW	3	3	53		0	104	26	143		0	
EYR	27	27	27	27	27	27	27	27	27				6	6	10	14	14	16	16	27		20	10	4	19		27	

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MORONDAVA, MADAGASCAR

PREPARED BY: NOCD ASHEVILLE STATION NAME: MANANJARY, MADAGASCAR ELEVATION: 20 FEET WMO #: 67143
LOCATION: 21 12S 48 22E

	TEMPERATURE (F)					PRECIPITATION (INCHES)							RELATIVE HUMIDITY	DEW POINT (F)	SURFACE WIND (KTS)			MEAN CLOUD AMOUNT (OKTAS)		MEAN NUMBER OF DAYS WITH								
	MEANS			EXTREME						SNOWFALL										PRECIPITATION					TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	MEAN	MAXIMUM	24-HR MAXIMUM	MEAN		DIRECTION	SPEED	MAX GUST	0700 LST	1700 LST	> 0 04		SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG	> 90		< 32	
JAN	86	72	79	94	63	13 2	32 6	3 0	15 1				81	73				6	5	17		0	9		11		0	
FEB	86	72	79	98	66	13 5	52 8	3 9	9 3				81	73				6	6	17		0	4		12		0	
MAR	85	71	78	95	66	17 0	54 2	2 4	17 0				83	73				6	4	19		0	4		4		0	
APR	83	69	76	89	63	8 1	16 [illegible]	2 1	7 4				82	71				[illegible]	5	15		0	6		4		0	
MAY	80	65	72	89	52	7 9	17 2	2 8	7 5				81	65				5	4	15		0	2		0		0	
JUN	78	61	69	83	46	8 [illegible]	23 3	2 0	7 8				80	64				5	4	15		0	1		0		0	
JUL	76	60	68	82	[illegible]	7 2	14 [illegible]	1 0	4 5				81	62				6	5	14		0	1		0		0	
AUG	76	60	68	82	54	6 [illegible]	18 [illegible]	1 0	6 0				79	62				6	4	13		0	2		0		0	
SEP	78	62	70	85	53	3 6	7 5	0 4	3 4				78	63				5	3	10		0	0		0		0	
OCT	80	65	73	87	55	3 9	12 4	0 2	4 9				78	66				5	4	8		0	1		1		0	
NOV	84	68	75	89	61	8 3	15 6	0 6	6 3				79	71				5	4	11		0	6		2		0	
DEC	85	70	78	90	65	9 4	30 4	2 1	6 1				79	71				5	5	11		0	11		4		0	
ANN	81	66	72	98	40	107 1	138 1	75 3	17 0				80	68				5	5	167		0	57		39		0	
EYR	10	10	15	10	10	20	20	20	10				20	10				17		30		10	10		10		10	

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MANANJARY, MADAGASCAR

PREPARED BY: NOCD ASHEVILLE   STATION NAME: FARAFANGANA, MADAGASCAR   ELEVATION: 20 FEET   WMO #: 67157
LOCATION: 22 48S 47 50E

	TEMPERATURE (F) MEANS			TEMPERATURE (F) EXTREME		PRECIPITATION (INCHES)				RELATIVE HUMIDITY		DEW POINT (F)	SURFACE WINDS (KTS) 0630 LST		SURFACE WINDS (KTS) 1330 LST		MEAN CLOUD AMOUNT (OKTAS)		MEAN NUMBER OF DAYS WITH PRECIPITATION					MEAN NUMBER OF DAYS WITH TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	0700 LST	1200 LST		DIRECTION	SPEED	DIRECTION	SPEED	0700 LST	1200 LST	>= 0 004	>= 0 04	SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG				
JAN	84	73	78	97	65	12 1	26 2	4 7	8 6	93	80		E	4	E	10	5	4	19	18			0				
FEB	84	73	78	97	65	10 5	26 0	4 0	6 3	92	79		E	5	E	9	6	5	18	18			0				
MAR	83	72	77	95	60	15 4	36 0	4 7	8 9	93	78		SE	4	ESE	9	6	5	23	18			0				
APR	81	69	75	89	57	9 7	20 1	1 6	6 2	93	78		SE	4	ESE	9	5	4	18	15			0				
MAY	78	64	71	89	52	6 7	15 3	2 3	4 0	93	78		W	3	ENE	8	5	4	16	15			0				
JUN	76	61	68	86	43	6 5	16 9	1 2	4 7	94	79		WSW	3	E	8	5	5	16	14			0				
JUL	74	60	67	83	46	6 8	16 2	2 0	3 8	94	78		W	3	NE	8	5	4	18	14			0				
AUG	75	61	68	90	48	5 6	13 4	0 9	2 0	95	78		W	3	NE	9	5	4	16	12			*				
SEP	76	63	70	85	50	3 7	7 3	0 5	2 2	94	79		NE	3	NE	10	4	3	14	9			0				
OCT	78	66	72	86	49	3 3	9 0	0 1	4 4	92	77		NE	4	NE	10	5	3	13	7			*				
NOV	80	69	75	89	56	6 9	21 3	0 1	13 3	91	78		NE	3	NE	11	5	4	15	10			0				
DEC	82	72	77	95	63	9 9	19 2	2 3	5 5	93	79		NE	3	NE	10	5	4	18	14			*				
ANN	79	67	73	97	43	97 0	137 6	66 9	13 3	93	78		NE	3	NE	9	5	4	204	164			*				
EYR	27	27	27	27	27	27	28	28	28	15	15		20	20	20	20	25	25	27	25			20				

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FARAFANGANA, MADAGASCA

PREPARED BY: NOCD ASHEVILLE   STATION NAME: MOROMBE, MADAGASCAR   ELEVATION: 16 FEET   WMO #: 67131
LOCATION: 21 45S 43 22E

	TEMPERATURE (F) MEANS			TEMPERATURE (F) EXTREME		PRECIPITATION (INCHES)				PRECIPITATION (INCHES) SNOWFALL			RELATIVE HUMIDITY		VAPOR PRESSURE INCHES OF MERCURY	DEW POINT (F)	PRESSURE ALTITUDE FEET (MEAN)	SURFACE WIND (KTS)			MEAN CLOUD AMOUNT (OKTAS)	MEAN NUMBER OF DAYS WITH PRECIPITATION					MEAN NUMBER OF DAYS WITH TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	MEAN	MAXIMUM	24-HR MAXIMUM	0700 LST	1200 LST				DIRECTION	SPEED	MAX GUST		> 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY				
JAN	90	73	82	103	61	5 9	20 2	0 4	8 6				86	67								6			2					
FEB	90	73	82	101	64	4 3	21 2	0 0	9 5				90	65								6			11					
MAR	90	71	81	101	55	2 2	19 3	0 0	6 7				89	60								4			11					
APR	88	67	78	99	53	0 2	1 4	0 0	1 2				91	57								1			4					
MAY	8[illegible]	60	73	94	46	0 4	1 3	0 0	1 1				90	62								2			*					
JUN	82	58	70	92	44	0 2	1 7	0 0	1 2				91	50								1			1					
JUL	82	56	69	91	42	0 1	1 5	0 0	1 2				89	48								1			*					
AUG	83	48	70	94	42	0 1	0 4	0 0	0 [illegible]				86	49								1			0					
SEP	94	61	73	99	50	0 2	2 7	0 0	1 4				88	55								1			2					
OCT	86	64	75	96	49	0 2	1 9	0 0	1 6				82	61								1			4					
NOV	87	68	78	96	54	1 1	1 8	0 0	2 4				[illegible]	64								2			8					
DEC	89	71	80	97	59	3 7	13 7	*	4 4				87	65								6			17					
ANN	86	67	76	103	42	18 7	31 3	4 [illegible]	9 5				87	58								34			62					
EYR	27	27	27	27	27	27	30	30	30				6	6								27			10					

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MOROMBE, MADAGASCAR

PREPARED BY: NOCD ASHEVILLE   STATION NAME: TULEAR,MADAGASCAR   ELEVATION: 30 FEET   WMO #: 67161
LOCATION: 23 23S 43 44E

	TEMPERATURE (F)					PRECIPITATION (INCHES)							RELATIVE HUMIDITY			SURFACE WIND (KTS)			MEAN CLOUD AMOUNT (OKTAS)		MEAN NUMBER OF DAYS WITH								
	MEANS			EXTREME						SNOWFALL											PRECIPITATION					TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	MEAN	MAXIMUM	24-HR MAXIMUM	0700 LST	1200 LST	DEW POINT (F)	DIRECTION	SPEED	MAX GUST	0700 LST	1700 LST	>= 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG				
JAN	90	73	81	103	61	3 3	13.8	0 0	7 4				82	69	74	SW	8		3	4	8		0	11					
FEB	91	73	82	105	61	3 2	10.7	0.0	8 9				95	67	72	SW	7		3	4	7		0	16					
MAR	89	71	80	102	58	1 5	14.2	0 0	2 3				82	60	71	SW	8		2	4	5		0	5					
APR	87	67	77	98	53	0 4	5 1	0.0	1 9				84	59	70	SW	7		2	2	2		0	0					
MAY	84	62	73	97	48	0 9	5 5	0 0	2.6				86	57	64	SSW	7		2	2	3		0	0					
JUN	81	58	69	89	45	0 4	4 1	0 0	1 2				87	55	62	SSW	7		1	2	3		0	0					
JUL	80	57	68	90	43	0 2	2 8	0 0	0 9				85	55	62	SSW	7		1	1	2		0	0					
AUG	82	58	70	92	44	0 1	2 0	0 0	1 1				79	52	61	SSW	8		1	1	1		0	0					
SEP	84	61	72	100	47	0 3	2 4	0 0	1 1				79	58	64	SSW	8		1	1	1		0	1					
OCT	85	64	75	102	50	0.6	4 1	0 0	2 6				77	64	69	SSW	8		2	2	2		0	0					
NOV	87	68	77	104	58	1 1	5 0	0 0	2 5				73	65	71	SW	8		2	4	3		0	6					
DEC	86	71	80	100	59	3.0	10 5	0 0	6.8				78	71	74	SW	8		3	4	6		0	24					
ANN	86	65	75	105	43	15 0	26 3	5 1	8 9				81	61	68	SW	8		2	3	43		0	63					
EYR	27	27	27	27	27	30	30	30	21				6	6	10	11	11		16	16	27		27	15					

\# LESS THAN 0 5 DAYS, 0 5 OR 0 05 INCH, OR 0 5 PERCENT AS APPLICABLE
THE VALUE LISTED UNDER PRESSURE ALTITUDE INDICATES THAT VALUE IS EXCEEDED ONLY 0 05 % OF THE TIME WHENL
LABELED 99 95% OTHERWISE IT IS THE MEAN
EYR IS EQUIVALENT YEARS OF RECORD (I E THE ACTUAL NUMBER OF YEARS UTILIZED IN THE CACULATIONS)

TULEAR, MADAGASCAR

PREPARED BY: NOCD ASHEVILLE   STATION NAME: FORT DAUPHIN, MADAGASCAR   ELEVATION: 26 FEET   WMO #: 67197
LOCATION: 25 02S 46 57E

	TEMPERATURE (F)					PRECIPITATION (INCHES)							RELATIVE HUMIDITY		VAPOR PRESSURE INCHES OF MERCURY	DEW POINT (F)	PRESSURE ALTITUDE FEET (MEAN)	SURFACE WIND (KTS)			MEAN CLOUD AMOUNT (OKTAS)	MEAN NUMBER OF DAYS WITH								
	MEANS			EXTREME						SNOWFALL												PRECIPITATION					TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	MEAN	MAXIMUM	24-HR MAXIMUM	0700 LST	1200 LST				DIRECTION	SPEED	MAX GUST		>= 0 004		SNOWFALL	THUNDERSTORMS	VISIBILITY REDUCED BY FOG	>= 90		<= 32	
JAN	05	72	79	94	64	7 7	22 1	1 1	8 6				84	70		72		NE	11		5	16		0	11	0	8		0	
FEB	85	72	79	96	65	6 5	17 2	2 2	4 1				85	68		71		ENE	11		4	14		0	10	0	7		0	
MAR	83	71	77	94	60	8 8	23 2	0 8	11 1				88	71		71		ENE	11		5	16		0	9	0	6		0	
APR	81	68	75	91	55	5 0	10 3	0 6	4 4				89	74		68		NE	11		4	14		0	5	0	5		0	
MAY	78	64	71	88	52	5 2	11 3	0 1	4 1				88	68		64		NE	9		4	13		0	4	0	0		0	
JUN	76	61	69	85	51	4 9	14 3	0 6	6 2				89	67		62		NE	9		4	13		0	3	1	0		0	
JUL	75	60	68	84	49	5 1	12 1	0 8	8 3				87	69		61		NE	9		4	13		0	2	0	0		0	
AUG	75	61	68	84	48	4 1	12 8	0 4	6 3				85	66		63		NE	11		3	12		0	2	0	0		0	
SEP	77	63	70	87	53	2 5	10 4	0 2	4 9				83	66		62		NE	12		3	10		0	1	1	0		0	
OCT	80	65	73	89	54	3 8	8 2	#	3 4				80	67		64		NE	14		3	10		0	5	0	0		0	
NOV	82	68	75	91	59	4 1	8 7	0 3	3 9				83	70		67		NE	12		4	13		0	8	0	5		0	
DEC	84	71	77	95	61	4 8	12 4	2 2	4 5				82	70		69		ENE	11		5	14		0	10	1	7		0	
ANN	80	66	73	96	48	62 5	81 1	38 9	11 1				85	69		66		NE	11		4	160		0	70	3	38		0	
EYR	27	27	27	27	27	30	30	30	21				6	6		20		9	9		10	27		20	20	25	20		20	

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FORT DAUPHIN, MADAGASCAR

PREPARED BY: NOCO ASHEVILLE | STATION NAME: FAUX CAP, MADAGASCAR | ELEVATION: 210 FEET | WMO #: 67194

LOCATION: 25 33S 45 32E

	TEMPERATURE (F) MEANS			TEMPERATURE (F) EXTREME		PRECIPITATION (INCHES)				SNOWFALL			RELATIVE HUMIDITY		VAPOR PRESSURE INCHES OF MERCURY	DEW POINT (F)	PRESSURE ALTITUDE FEET (MEAN)	SURFACE WIND (KTS)			MEAN CLOUD AMOUNT (TENTHS)	MEAN NUMBER OF DAYS WITH PRECIPITATION		SNOWFALL	THUNDERSTORMS	VISIBILITY	TEMPERATURE			
	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	MEAN	MAXIMUM	MINIMUM	24-HR MAXIMUM	MEAN	MAXIMUM	24-HR MAXIMUM	0700 LST	1200 LST				DIRECTION	SPEED	MAX GUST		>= 0 004								
JAN	89	73	81	105	58	2 7			6 2				82	75								9								
FEB	90	73	81	106	60	2 7			4 0				82	73								8								
MAR	87	72	79	104	51	2 4			4 0				83	73								8								
APR	85	67	76	104	51	1 0			2 6				83	73								6								
MAY	81	62	72	98	45	1 0			1 5				82	72								7								
JUN	76	59	69	101	43	1 5			4 7				82	68								6								
JUL	78	57	67	92	40	0 8			2 6				80	69								6								
AUG	79	58	69	97	40	0 5			3 6				81	71								4								
SEP	83	61	72	102	47	0 5			0 9				80	71								3								
OCT	86	65	76	104	47	0 8			1 0				79	72								4								
NOV	87	68	78	106	54	1 3			3 2				78	72								5								
DEC	89	71	80	105	59	3 7			4 4				79	73								9								
ANN	84	66	75	106	40	18 7			6 2				81	72								75								
EYR	27	27	27	27	27	27			21				6	6								27								

\# LESS THAN 0 5 DAYS, 0 5 OR 0 05 INCH, OR 0 5 PERCENT AS APPLICABLE

THE VALUE LISTED UNDER PRESSURE ALTITUDE INDICATES THAT VALUE IS EXCEEDED ONLY 0 05 % OF THE TIME WHEN LABELED 99 95% OTHERWISE IT IS THE MEAN

EYR IS EQUIVALENT YEARS OF RECORD (I E THE ACTUAL NUMBER OF YEARS UTILIZED IN THE CACULATIONS)

FAUX CAP, MADAGASCAR